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DOMESTICATION FEATURES IN ANIMALS AS FUNCTIONS OF HUMAN SOCIETY

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The creation of domesticated animals and cultivated plants is the oldest and grandest example of experimental biological activity of man. It is an example of the transformation and adaptation of nature by labor to the satisfaction of the needs of human society. Cultivation and domestication were the first steps in the economic and scientific revolution of the New Stone Age that ended the impasse of savagery and ushered in the age of neolithic barbarism.[1]

Domestication changed the life of the beast, the character of the animal, and its anatomy and physiology. The domesticated animal in its turn profoundly affected the life of human society, the character of man, and his physical development.

Apart from the domestication of the wolf, which may have been as much due to the animal's voluntary attachment to the offal and warmth of human habitation (a phenomenon that has been observed among foxes in the Arctic) as to the human desire for companionship,[2] the domestication of the remaining domestic animals seems to have had economic reasons: the provision of a reserve of animals for sacrificial purposes in the environment of settled cultivators that became progressively depleted of game (cattle); the substitution of wild species (reindeer) for domestic stock that could not be propagated in a new and unsuitable environment; and the provision of additional food reserves (rabbit) or beasts of burden (dromedary).[3] In close symbiosis with his domesticated animals, man soon learned to develop for his own benefit certain features — domestication features — that do not occur, or are excluded from propagation, in the wild animal.

Color. The first changes in domestication affect the size and color of the stock. Already in the wild state, leucism and albinism sporadically occur among species normally of a dark coloration. Wolves, in which the prevailing color is zonar-grey, may develop a more or less marked grey or red tinge, while in some cases the fur is much paler than usual, even pure white, and in others nearly or quite black.[4] Among birds, wild boar, and wild deer, white specimens are not uncommon, while among deer kept in parks, albinism frequently spreads throughout the herd within a few generations.[5] In the wild state, albinistic individuals of otherwise dark species are commonly eliminated by the process of natural selection. In arctic and subarctic regions, the reverse has taken place in several species.

In domesticated animals, artificial selection of color variations has been practiced since early times. White used to be especially valued, and selection of breeding stock was directed accordingly. The Hottentots of the Cape of Good Hope selected their cattle according to color in order to facilitate distinction between the stock of different owners that was pastured in common. Every stock owner kept and bred only animals of his selected color, exchanging those that differed for animals of the desired pattern. However, none of the Hottentots ever exchanged a white ox or cow, which they looked upon as an invaluable leader of the herd. This preference for white cattle the Hottentots seem to have brought with them on their migration from their earlier home in East Africa.[6] The ancient Egyptians worshipped Isis in the likeness of a

[1] Gordon Childe, *What Happened in History* (New York, 1946), 41.

[2] A. Pedersen, "Eine Entdeckungsreise nach Nordost-Groenland," *Wild und Hund*, No. 48 (Berlin, 1926); Conrad Kronacher, *Allgemeine Tierzucht* (6 vols., Berlin, 1921–1927), 1:56–73.

[3] C. Daryll Forde, *Habitat, Economy and Society —A Geographical Introduction to Ethnology* (New York, 1934), 455.

[4] N. A. Iljin, "Wolf-Dog Genetics," *Journal of Genetics*, 42:359–414 (July, 1941).

[5] Max Hilzheimer, *Natuerliche Rassengeschichte der Haussaeugetiere* (Berlin, 1926), 82.

[6] H. Epstein, "Animal Husbandry of the Hottentots," *Onderstepoort Journal of Veterinary Science and Animal Industry*, 9:653 (October, 1937).

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white cow, and used to pray that the deity send them a white ox. The half-Hamites of East and East Central Africa slaughter a white bullock at the great ceremony of handing over the country from one age-grade to the other.[7] In Cadzow Forest, Lanarkshire, Scotland, two white bulls were slaughtered in the Druid temple every year, on the sixth day after the first full moon following March 6. Among the German tribes, as among the Persians, Scyths, and Venetes, white horses were particularly esteemed. When Xerxes arrived at the Struma river, his magi sacrificed white horses in honor of the river. The Slavs held a white horse sacred to the sun god Svatovit, and a black one to Triglav, the god of darkness and evil.[8]

Many primitive pastoralists regard certain color patterns as the most desirable from an economic or social point of view. The Arabs of Nejd breed their hairy sheep in a single color pattern—black, with the head, tip of tail, and lower part of the legs white. The sheep of Hejaz, on the other hand, are white with fawn-colored ears, while the goat of Hejaz, which furnishes the material for the tents of the Bedouin, is black.[9] In Ruanda-Urundi, East Africa, wealthy tribal chiefs keep herds of cattle of a uniform coloration—red, white, or variegated.[10] This custom is traceable to Abyssinia, where it may have originated. The custom of selecting cattle with a view to certain color patterns has extended also into southern Africa in the train of the Bantu migrations. Chief Lewanika of the Barotse people of Northern Rhodesia maintained a herd of pure white cattle with black points. These were all slaughtered when Lewanika died in the year 1916.[11] The Zulu have among their cattle a type with white body, black muzzle, black inside to the ears, and a few black spots near the tail setting. At one time these animals were regarded as royal cattle and treated with great respect; in fact, it is thought that to some extent they were held sacred.

Selection of domestic stock according to color is practiced even among modern breeders. Originally the cattle of the Netherlands were commonly red or red-and-white. Black-and-white colored cattle were imported from Jutland after rinderpest had destroyed many Dutch herds. However, this color pattern became predominant in Holland and other countries where Friesian cattle were bred only after U.S.A. breeders imported about 10,000 head of Dutch cattle during the decade 1875–1885, the importers insisting on the black-and-white pattern.[12] Similarly, Aberdeen-Angus cattle were originally found in several shades of color. The black color of the modern standard came to the fore during the seventies and eighties of the nineteenth century, owing to the demand of American importers for dark-colored specimens.[13]

Although color plays an important role in the breeding of cattle, it has commonly but a fictitious economic value. Occasionally the importance attributed to color markings may even be to the detriment of the breed if valuable breeding stock is culled owing to some minor color deviation from the established standard. An exception forms the absence of pigment which causes constitutional weakness of the skin, especially detrimental in tropical and subtropical climates with intense solar radiation. For this reason, breeders in subtropical countries show a justified reluctance to import white Shorthorn cattle. For a similar reason, dairy farmers in South-West Africa used to show preference for Friesian bulls excluded from registration in European herd books because of a black-colored scrotum. That even taxation may influence color in livestock is illustrated by a peculiar tax on black cattle which the Dutch East India Company introduced in several districts of Cape Colony. This tax contributed to the culling of

[7] Charles Seligman, *Races of Africa* (London, 1930), 165.

[8] Victor Hehn, *Kulturpflanzen und Haustiere in ihrem Uebergang aus Asien nach Griechenland und Italien sowie in das uebrige Europa* (7th ed., Berlin, 1902), 44.

[9] H. Epstein, "The Fat-tailed Sheep of Arabia," *Zeitschrift fuer Tierzuechtung und Zuechtungsbiologie*, 63:381–396 (October, 1954); and "The Hejas Dwarf Goat," *Journal of Heredity*, 37:345–352 (November, 1946).

[10] H. Kroll, "Die Haustiere der Bantu," *Zeitschrift fuer Ethnologie*, 60:241 (1928).

[11] H. H. Curson and R. W. Thornton, "A Contribution to the Study of African Native Cattle," *Onderstepoort Journal of Veterinary Science and Animal Industry*, 7:661 (October, 1936).

[12] D. L. Bakker, *Studien ueber die Geschichte den heutigen Zustand und die Zukunft des Rindes und seiner Zucht in den Niederlanden* (Mastricht, 1909).

[13] James Macdonald and James Sinclair, *History of Aberdeen-Angus Cattle* (London, 1910).

black animals from the herds of the Boers.[14]

In early times, sheep breeders paid little attention to the color of their flocks, which comprised white, tan, grey, black, and variegated specimens. The purple dyeing industry, first developed by the Phoenicians on a large scale, provided the impetus for the gradual elimination of colored sheep from improved flocks; for none but a black dye can be used on wool that is black, tan, or grey. As the murex fishery started the Phoenicians on their maritime career, purple dyeing spread throughout the Mediterranean region, and with the dyeing industry extended the demand for white wool.[15]. With the modern industrialization of weaving and dyeing, the elimination of colored sheep has spread so rapidly that all improved wool-bearing breeds now carry white wool; and there are only a few left in which some difficulty is still experienced in preventing a light scattering of dark fibers in the fleece.

A further illustration of the extent to which color in several domestic animals represents a function of modern society is provided by the large financial interests involved in the breeding of numerous color fads in dogs, cats, rabbits, poultry, pigeons, and fish. Even in the horse, kept singularly free from capricious color fancies, the white-colored Apeloosa breed speckled with black in the manner of a leopard has been evolved for the purpose of furnishing a showy circus horse.

Horns. Among primitive pastoralists, it is a frequent practice to bend the horns of cattle, sheep, and goats into various shapes, or to increase their number by splitting the buds. Certain Nilotic tribes such as the Dinka and Nuer, deform the horns of their cattle artificially—a custom believed to be of ancient Egyptian origin. Among the Dinka, the usual deformity is with the one horn forwards, the other back. Among the Nuer, one horn is trained to grow upwards, the other brought in a curve forwards across the beast's forehead. Cattle with artificially or naturally deformed horns have a social and emotional value, and the interest in such animals extends far beyond the Nile region into Kenya.[16] In South Africa, artificial deformation of the horns used to be practiced by several Bantu peoples; while in Northern Rhodesia, horns that hang down and swing owing to the lack of cores, or that are otherwise distorted, still excite high admiration.[17]

In several parts of Africa, horn gigantism in cattle has a high social value. Originally this feature was developed by Hamitic mountain dwellers in the western desert of Egypt. With the introduction of humped zebu cattle into Africa, horn gigantism passed into several hybrid (sanga) breeds derived from the crossing of the original straight-backed cattle of the Hamites with humped zebus. Single horns may attain a length of over 80 inches, and a basal circumference of 33 inches.[18] The reasons for the selection of giant-horned cattle are social and cultic rather than economic. Among the Masai and many other pastoral tribes throughout the savanna belts of Africa, animals with very large horns are held in high esteem. The cattle of the Masai are very mixed in type; for as a result of numerous predatory raids on their neighbors, nearly every variety of cattle in East Africa has found its way into the Masai kraals. All of these are humped, and two main types may be distinguished: a rather small, lightly built sanga strain with very long and splendidly curving lyre-shaped horns, and a thickset short-horned zebu strain which yields nearly twice as much milk; nevertheless the sanga strain is more highly valued. Comparative study of other social traits of the Masai has suggested that their cattle complex developed farther north among the Hamitic Galla of Abyssinia and has been carried south by the advances of the Nilo-Hamitic pastoralists, of whom the Masai are the largest and most powerful group.[19]

In Uganda, the short-horned zebu is hardier and possesses greater power of resistance to rinderpest, tuberculosis, and other diseases, as well as to such adverse conditions as poor grazing or fly infestation, than

[14] Eric A. Walker, *A History of South Africa* (London, 1928).

[15] Lucien Febvre, *A Geographical Introduction to History* (London, 1925), 259.

[16] Charles G. Seligman, "Egyptian Influence in Negro Africa," in *Studies presented to F. L. Griffith* (London, 1932).

[17] E. W. Smith and A. M. Dale, *The Ila-speaking Peoples of Northern Rhodesia* (London, 1920), 1:128.

[18] Richard Lydekker, *The Ox and Its Kindred* (London, 1912).

[19] Forde, *Habitat, Economy and Society*, 303.

the long-horned sanga cattle. In spite of this economic advantage of the zebu, the long-horned sanga cattle are more highly valued. In Tanganyika Territory, short-horned zebus are encountered in addition to giant-horned Ankole cattle. Economically, the zebu is definitely the more useful animal: hardier, maturing earlier, milking better, working better, and furnishing a superior carcass. It maintains its condition when food is scarce and innutritious, and water available only every other day. But the owner of an Ankole beast judges altogether differently. He will not exchange a long-horned Ankole cow of poor conformation and production for a better but shorter-horned zebu.[20]

However, in some instances economic reasons operate against social forces. Among the Kivu cattle of the Belgian Congo, there are occasionally encountered horns of so huge a size that the animals suffer serious incommodation. The Warundi and Wawira consider such horns as beautiful, but the Wanyabongo do not hold them in favor because the cows of the giant-horned variety are poor milkers and the breed is hard to fatten.[21] In general, the breeders of the giant-horned cattle are fighting a losing battle; for natural selection outweighs their preference for giant-horned stock. In the course of a few centuries, the short-horned zebu, introduced into East Africa by Indian and Arab traders, has superseded the longhorn cattle in nearly all low-lying areas and restricted their habitat to well-watered mountain grassland.

Under modern range conditions, horns in beef breeds of cattle are not only superfluous but an obvious disadvantage. Polled cattle are quieter and easier to handle and fatten. In general, their hides and carcasses are also more valuable, as polled cattle do not hurt each other on pasture or during shipment. Ranchers in the United States have therefore developed hornless types of the most popular beef breeds, Shorthorn and Hereford. Such cattle have been imported into Australia and the Argentine; and it is reasonable to assume that in the more advanced ranching countries the polled types will gradually gain on the horned.

Dwarfism. During the early stages of domestication, environmental conditions are generally less favorable to the development of the tamed animals than is the normal life of the wild beast. The beginnings of domestication are therefore frequently accompanied by a reduction in the body size of the domesticated stock, owing to natural selection in relation to the adverse conditions. The vast majority of these primitive dwarf breeds are pituitary dwarfs characterized by a hereditary underdevelopment affecting all parts and organs of the body alike so that the entire skeleton is well proportioned.

The number of achondroplastic breeds of domesticated animals is far smaller, and the reason for their evolution differs from that of the pituitary dwarfs. Achondroplasia is characterized by a marked difference in bodily proportions. There is an average size trunk coupled with abnormally stunted extremities.[22] The earliest record of an achondroplastic animal, dated to about 1900 B.C., is represented by the painting of a bitch from Beni Hassan, Egypt, where this type seems to have been evolved because of its grotesque appearance. Judging from the care the Egyptians bestowed on the import of human dwarfs from Negroland, dwarfism was highly valued. Prior to the conquest of Peru by the Spaniards, the Incas had also developed an achondroplastic breed of dog that vanished with the Inca civilization.[23] Among the Huancas and several other tribes of Peru, these dogs were regarded as sacred and some were mummified. The modern dachshund, extreme representative of achondroplasia in dogs, has been evolved for badger hunting from short-legged hounds similar to those still occurring among spaniels and bassets. However, the original purpose has now almost completely given way to the breeding of the type for fashion, as in the case of the Dandie Dinmont and Skye terriers, the pug, Pekinese, and other dwarfs of less pronounced achondroplasia, as well as in the numerous pituitary dwarf breeds of dogs.

In equatorial Africa, several achondroplastic breeds of goats are encountered in the general breeding area of pituitary dwarf goats.[24]

[20] Curson and Thornton, "A Contribution to the Study of African Native Cattle," 658.

[21] F. Carlier, "L'Elevage au Kivu," *Bulletin Agricole du Congo Belge*, Vol. 3 (1912).

[22] Epstein, "The Hejaz Dwarf Goat," 345–352.

[23] Hilzheimer, *Natuerliche Rassengeschichte der Haussaeugetiere*, 63.

[24] Epstein, "The Dwarf Goats of Africa," *East African Agricultural Journal*, 18:123–132 (January, 1953).

In Busoga and eastern Uganda, an achondroplastic goat is bred that is prized for its unusual appearance. The hair grows extremely long over the back and sides and on the top of the head; it falls over the eyes like the hair of a Skye terrier. The Bongo, a true Negro people of the eastern Sudan, and the Mittu, of the high Nilotic group of inter-Congo-Nile tribes, have two different goat breeds, one of which is dwarfed and characterized by the heavy body and short legs.[25] A similar small and plump breed, distinguished by the heavy belly reaching nearly to the ground, is encountered among the Hausa in the region from Zaria to Katsina and Sokoto. In the most pronounced form, achondroplasia is met with in the dwarf goats of the Cameroons, which are distinguished by the heavy compact body on very short thick legs.[26] All these breeds, which are highly valued by their owners, have been developed solely for their strange appearance, in an environment that favors dwarf goats of any type—pituitary, achondroplastic, or mixed.

Among cattle, only a single achondroplastic breed is known—a humped zebu with a long deep body on tiny crooked legs.[27] This breed, which is held sacred, is kept in several Indian temples for the attraction of visitors.

The only achondroplastic breed of livestock developed for a purely economic, rather than an aesthetic purpose, was the Ancon sheep that traced its origin to a male achondroplastic lamb born in a small flock of normal sheep in Massachusetts, in 1791. The Ancon breed, no longer extant, was characterized by the long body and the short, crooked legs which prevented it from jumping fences—the reason for its propagation.[28]

Weight and Speed in Horses. An increase in size and weight of domesticated animals has been brought about solely as a consequence of changes in human social relations. In the horse, increase in size and weight has proceeded in two different directions: one has led to the evolution of the heavy breeds of draft horses, the other to the Thoroughbred and its derivatives.

Horses of large size were first evolved during Roman times in response to the demand of the legions for a strong cavalry horse such as is represented in the equestrian statue of Marc Aurel. The foremost breeding center of heavy horses was Spain, where the ancestral stock, as illustrated by numerous iron age sculptures and rock drawings, seems to have been heavier than in other parts of Europe, Asia, or northern Africa. From Spain the Romans introduced these horses into several of their colonies, including Britain. The Roman importations altered the stock of western Europe to such an extent that by the middle of the second century A.D., the original small 12-hand ponies were no longer easily obtainable along the routes traversed by the Roman legions and their auxiliaries.[29]

During feudal times, the increasing weight in armor made the breeding of a still larger horse essential. Horsemen commenced to wear some form of defensive armor during the early centuries A.D., but especially during the close of the twelfth century, when the use of the crossbow and the experience of the Crusades initiated a great development of European armor. The hauberk gave way to armor of interwoven chain, while the latter in its turn, from the year 1300 onwards, was gradually superseded by plates of metal until, at the beginning of the fifteenth century, the knight was sheathed in a complete panoply of plate armor. This ever increasing weight of mail demanded horses of increased size and strength, and induced the development of the large breeds of horses in those countries where knighthood flourished most, that is, in Spain, France, and Flanders. By the sixteenth century, a charger was capable of carrying a rider weighing, with his own armor and that of his steed, about 425 pounds.[30]

The horses of Britain gained considerably in size when the Saxons and Danes imported larger breeds from the Continent, and especially when the Normans introduced that large and heavy breed of horses which had been steadily developed for twelve centuries in northwestern Europe.

[25] Georg Schweinfurth, *Im Herzen von Afrika* (Leipzig, 1918).

[26] Adolf Staffe, "Die Haustiere der Kosi," *Zeitschrift fuer Tierzuechtung und Zuechtungsbiologie*, 40:252–285; 301–342 (1938).

[27] J. Ulrich Duerst, *Grundlagen der Rinderzucht* (Berlin, 1931), 238.

[28] Kronacher, *Allgemeine Tierzucht*, 2:71.

[29] J. Cossar Ewart, "On Skulls of Horses from the Roman Fort at Newstead near Melrose," *Transactions of the Royal Society of Edinburgh*, 45:555–587 (1907).

[30] William Ridgeway, *The Origin and Influence of the Thoroughbred Horse* (Cambridge, 1905), 336.

The origin of the recent breeds of heavy draft horses in France, Belgium, and Britain, goes back to the seventeenth century when, after the introduction of firearms, the heavy armor of the feudal knights fell into disuse, and the powerful charger, no longer required for war, was made into an animal of draft. A heavy draft horse became necessary for several purposes: industrialization, by creating large urban centers with increasing demand for agricultural products, induced farmers to plow up heavy lands, so far used only as pastures, for the production of feeding crops, wheat, and sugar beets. Work on such land required a heavy type of horse which is now gradually being replaced by the tractor. Further, in Britain, Belgium, and northern France, the industrial revolution called for a suitable draft animal for the short-distance transport of heavy loads in urban areas. It took several decades until this task was taken over by motorized transport. Similarly, the ever increasing weight of cannons called for a progressive increase in the weight of horses until, in the course of the First World War, mechanization of transport became general in the armies at the western front.

The evolution of the racing type in horses is traceable to the second millenium B.C., when the peoples of the northern grassland zone, after the development of the light two-wheeled war chariot from the heavy ox-cart, carried their campaigns of conquest into China, India, western Asia, Egypt, and southern and western Europe. Chariot races for a long time remained a characteristic feature of all horse breeding peoples settling beyond the fringes of the grassland zone.[31] But the true racing type was evolved only after the horse was freed from the chariot. The peoples of northeastern Asia were the first to bring riding to the highest and most one-sided perfection, so that even the anatomy of the horsemen became adapted to their mode of life on horseback. We learn from Chinese sources that the Huns taught their children to ride on the backs of sheep at the age when other infants learn to walk. The most far-reaching development of the racing type was accomplished by the Arabs, who experienced the value of a horse of great speed and endurance in their inter-tribal raids characteristic of Bedouin society, as well as in the campaigns of Mohammed and his successors.

The Thoroughbred race horse, which has had such a profound influence on nearly every breed of riding horses throughout the world, was founded on oriental blood. It is significant that the development of the English race horse at the beginning of the seventeenth century followed the revolutionary changes in the art of warfare brought about by the introduction of firearms.[32] Instead of the knight's heavy charger, a light cavalry horse bred for speed, staying power, and maneuverability, became an essential part of nearly all European armies. And it is only since the introduction of the machine gun that the importance of the remount has begun to fade. Parallel with this recent development, the breeding of Thoroughbred horses has become largely the prerogative of a leisured class of society, the basis of an industry built on racing and betting.

With the reduced demand for remounts, racing itself has undergone significant changes. The importance of long distance races has declined in favor of short distances. The resulting neglect of the stayer families in Thoroughbred breeding, and the coming to the fore of the sprinters, has been accompanied by genetic changes in the racing stock, both anatomically and physiologically; anatomically mainly in the skeleton of the shoulder and croup; physiologically in the capacity of the organism to incur a high "oxygen debt."

Meat and Fat. Since the beginning of domestication, all animals, with the exception of the cat, have furnished human society with meat. Even the flesh of the common pariah dog is still valued by several African native peoples. But until relatively recent times, the especial development of a meat-producing type was only occasionally accomplished. The ancient Egyptians evolved a beef type from their longhorn cattle when the wealth, amassed during the dynastic period in the palaces of the rulers and the temples of the priesthood, encouraged the demand for beef of a superior quality. However, it was only in the course of the industrial revolution that the concentration of large populations in towns and cit-

[31] Joseph Wiesner, "Fahren und Reiten im Alteuropa und in Alten Orient," *Der Alte Orient*, Vol. 38 (1939).

[32] Matthew H. Hayes, *Points of the Horse* (5th ed., London, 1930), 359–360.

ies and the increasing accumulation of wealth created an unprecedented and persistent demand for animal products, particularly meat. Remunerative prices encouraged breeders to develop suitable breeds of livestock; and it is no coincidence that the second half of the eighteenth century witnessed Robert Bakewell's pioneer work in improved methods of breeding for beef and mutton, and that nearly all the more important breeds of beef cattle, mutton sheep, porkers, and bacon swine were developed in Britain, then industrially the most advanced country.[33]

In 1710, at the Smithfield Market, center of British meat trade, beefs averaged 370 pounds, and sheep 28 pounds in weight; whereas in 1795 average weights were 800 and 80 pounds, respectively.[34] In the course of the nineteenth century, the weights of cattle and swine in western and central Europe were more than doubled. In Bavaria, during the period 1816–1867, the weight of cattle increased by 40 per cent and of swine by 71 per cent; during the following 50 years, the weight of cattle by another 170 per cent and of swine by 70 per cent.[35]

During the period of development of the modern breeds, the value of fat and tallow greatly exceeded the value of lean meat. For prior to the introduction of petroleum, tallow was the principal material for lighting. In accordance with paragraph 35 of the "Capitulae de villis" of Charles the Great, the fattening of oxen was directed solely to the production of tallow, which was rendered at the place of slaughter. During the two decades, 1826–1845, the average prices of beef and tallow in Austria were 6.9 and 16.8 kreuzers per one pound, respectively. Kidney fat during the same period cost twice as much as beef, and a large proportion of fattened cattle and sheep were sold direct to candle and soap factories.[36] For this reason, Bakewell was not worried when a customer complained that his sheep were so fat a gentleman could not eat them.

As soon as petroleum, gas, and electricity took over the role of the candle, the relative value of fat and meat changed in favor of the latter, and breeding and fattening methods were altered accordingly. While in France, 150 years ago oxen used to be fattened at the age of 10 to 15 years, since young beasts were merely growing and putting on flesh during the fattening process instead of large masses of valuable fat, the present demand in nearly all industrialized countries is for beef from early maturing cattle not older than 30 months at the time of slaughter. A contributory factor to this development is the growing percentage of married women employed in modern commerce and industry. While in a family in which the husband was the sole breadwinner, it was of little account if beef derived from old beasts had to be cooked for the formerly normal time of five hours; nowadays, with many married women having to add their income to that of their husbands in order to make ends meet, the demand is for tender cuts of young animals suitable for quick steaks and roasts. In consequence, the breeding for baby beef and fat lamb to meet these requirements is changing the breeding policy and thereby the anatomical and physiological character of many breeds of livestock in several countries such as Britain, the United States, New Zealand, Australia, and the Argentine, to an increasing extent.

In semiarid regions, the breeding of sheep and cattle with a view to fat-production, has taken a different direction. In western Asia, cattle and sheep with store reserves of fat in various parts of their bodies were evolved about 5,000 years ago. In cattle, accumulations of fat are deposited in the hump, which may be either cervico-thoracic or thoracic in situation.[37] Such humped cattle, known as zebu, have since spread over a large part of southern Asia and throughout Africa south of the Sahara. They excel other types of cattle in hardiness and resistance to drought. The original zebu type had a cervico-thoracic flesh hump, not given to complete adipose deterioration, although in times of plenty a certain amount of fat may be deposited in layers, at first subcutaneous, then between Musculus trapezius and Musculus rhomboideus, and

[33] Laurence M. Winters, *Animal Breeding* (3d ed., New York, 1945), 18.

[34] Victor Arthur Rice, *Breeding and Improvement of Farm Animals* (3d ed., New York, 1942), 21.

[35] Kronacher, *Allgemeine Tierzucht*, 4:144–145.

[36] Duerst, *Grundlagen der Rinderzucht*, 516.

[37] H. H. Curson and J. H. R. Bisschop, "Some Comments on the Hump of African Cattle," *Onderstepoort Journal of Veterinary Science and Animal Industry*, 5:621–644 (October, 1935).

finally beneath the latter. The endeavor of pastoralists to increase the quantity of fat in the hump has led by way of selection to an overdevelopment of the thoracic part of M. rhomboideus, capable of considerable adipose development. Thereby the situation of the hump passed from the cervico-thoracic to the thoracic, M. trapezius simultaneously undergoing certain secondary structural and functional changes.

In sheep, the accumulation of fat is concentrated either in the rump or the tail. Fat-rumped breeds may have very short tails or be completely devoid of caudal vertebrae, while in fat-tailed breeds, the tail displays a marked variability in size and conformation, in some breeds attaining so great a length as to sweep the ground. Fat-tailed breeds extend over a large part of southern Asia, a small area in southeastern Europe, and the whole of Africa, excluding Somaliland and the tropical forest belt. Fat-rumped sheep are bred in the Horn of Africa, southern Arabia, and Iran, extending from the Black Sea through Turkestan, Mongolia, and Manchuria to China, and including the greater part of Siberia.

The development of store reserves of energy in the tail or rump, on which the animal draws during periods of nutritional scarcity, is explainable through the agency of artificial selection. This implies that fat deposits on the tail and rump of sheep may sporadically occur among any breed but that it was only in steppe and desert regions and among peoples lacking other fat-producing animals that these features were considered of sufficient economic importance to induce breeders to select specimens with adipose deposits for breeding purposes. Among ordinary sheep, the occurrence of both fat-rumped and fat-tailed specimens has been recorded. The Cotswold and Romney Marsh breeds exhibit a marked tendency to accumulate fat on the rump almost to the degree of producing a deformity.[38] In some Border-Leicester rams there is a considerable amount of fat at the root of the tail or on the buttocks.[39] Since there exists no economic necessity in Britain to produce a fat-rumped or fat-tailed breed of sheep, such specimens are not selected for breeding purposes; on the contrary, they are culled, as the fat deposits in the rump and tail are considered undesirable. Fat-tailed and fat-rumped sheep were developed in steppe and desert regions where such animals proved more resistant during periods of drought than the bulk of the ordinary stock, and where the fat-producing swine was lacking for cultic reasons or because the nature of swine is unsuited to the roaming life of nomads.

Milk. The first development of a dairy type in cattle took place during the period of the urban revolution in Sumer and Elam, where the fertility of the soil and the co-operative effort of a planned society enabled farmers to produce a surplus of foodstuffs. Villages expanded into cities, surrounded by gardens, fields, and pastures. Artisans, laborers, transport workers, and traders were withdrawn from direct food production. The temples of the priesthood, where the wealth was concentrated, provided breeding stock, farm equipment, boats, and tools.[40] The demand of urban society for a regular supply of milk and dairy products called for a type of cattle adapted for this purpose. From Mesopotamia, this new type spread in three main directions: (1) eastwards, north of the zebu belt, to the shores of the Pacific; (2) along the eastern and southern coast belt of the Mediterranean, down the west coast of Africa as far as Nigeria; and (3) along the northern littoral of the Mediterranean through Switzerland and the coastlands of the North Sea to the Channel Islands and Britain (Celtic shorthorn).

When the industrialization of western Europe created a market for milk and dairy products, several breeds of cattle were developed to meet these requirements. Outstanding among these are the cattle of the Netherlands, the Jerseys and Guernseys, and the Brown Swiss, all of them either entirely or predominantly of the shorthorn type originally evolved for the purpose of supplying milk and dairy products to the urban populations of ancient Mesopotamia.

No other domestic animal, with the exception of the goat, has been developed for the purpose of milk production to the same ex-

[38] Richard Lydekker, *The Sheep and Its Cousins* (London, 1912), 118.

[39] J. Cossar Ewart, "Domesticated Sheep and Their Wild Ancestors: Wild Sheep of the Argali Type," *Transactions of the Highland and Agricultural Society of Scotland*, 26:90 (1914).

[40] Childe, *What Happened in History*, 87–88.

tent as have cattle. Even the goat is not milked so universally. And the milk of the buffalo, camel, horse, and reindeer is used only in a few restricted areas; no special dairy breeds have been evolved from them. In certain conditions, the sheep approaches the goat as a milk producer. After the Thirty Years' War, milking of sheep became a general practice in central Europe, owing to the lack of cattle, the tremendous loss of population, and the reduced demand for wool. At that time several dairy breeds of sheep were evolved, a remnant of which is still found in the marsh sheep of East Friesland. The dairy properties of sheep have been developed also in some other conditions. Before the Hottentots of South-West Africa came in contact with goat-breeding Bantu peoples, they had no goats and used to milk their fat-tailed sheep and teach their infants to suck the milk straight from the udders.[41] In southern France, where the true Roquefort cheese commands a high price, sheep are kept for their milk as well as their wool. In the more remote parts of the Balkans—western Asia and North Africa—dairy breeds of sheep are retained in agriculturally and industrially backward regions. But with the growing impact of industrialization on economic and social conditions, dairy sheep breeding is losing its importance even in these countries.

Wool. In the first stage of their exploitation by man, most domestic animals are of no use until they are killed. The sheep was domesticated in order to make human society independent of the vagaries of the hunt for meat and skins. In both the wild and primitive domesticated sheep, the body is covered with a coat of short hair, extending into a mane in mature rams. But already in wild sheep the hair in its structure is definitely wool although it is coarse, stiff, and nearly straight. It possesses the essential character of wool in the finely intricate arrangement of its serrated and imbricated scaly surface that gives to wool that remarkable felting property upon which its peculiar utility depends. Under domestication, the hair has become longer, finer, and wavier, chiefly through selection of suitable breeding stock that appeared either spontaneously or upon the crossing of various strains of domesticated sheep. And as the woolly fleece could repeatedly be plucked or shorn from the live animal, the sheep entered a higher stage of exploitation by man—the stage of its usefulness for its wool while alive, and for mutton and skin after exhaustion of its usefulness as a source of wool. Only in countries with a warm climate where people have no need for wool, as in southern Asia and in Africa south of the Sahara, primitive breeds of woolless sheep have survived to this day.

In goats, the hair has not developed the peculiar quality of felting. For this reason mohair and cashmere, although valuable textile fibers on account of their luster, length, fineness, and strength, have but a restricted use: mohair in the manufacture of upholstery and lining materials, rugs, summer suits, draperies, and decorative trimmings, and cashmere in the manufacture of shawls. And, unlike wool, which has been bred into every improved breed of sheep, mohair and cashmere have remained the respective properties of only two breeds of goat, the Angora and Cashmere.

Improvement of wool in sheep has taken two main directions: the elimination of colored wool and breeding for white fleeces as a prerequisite of dyeing, and the improvement in the weight and quality of fleeces, more especially the elimination of kemp.

With the gradual shift of economic power from western Asia to Greece, and from Greece to Rome, the wool industry migrated to the western Mediterranean region. Breeding stock was imported from Asia Minor by way of Samos to Attica and Epirus. From Greece, fine-wooled sheep were brought to Sicily and lower Italy, and to the ancient Greek colony of Massilia at the mouth of the Rhone, whence they reached the Iberian peninsula. During the 450 years of their rule, the Romans imported large numbers of fine-wooled sheep into Spain in order to improve the local breeds. Gades and Corduba became the marketing centers that furnished Rome with the finest woolen cloth. The setback to the Spanish wool industry, caused by the Visigoth invasion in 456, was of short duration as the newcomers soon settled down to an agricultural existence. When the Moors conquered Spain in 712, they found a flourishing agriculture and soon developed an extensive weaving industry which became famous throughout the medieval world. As soon as the Moors

[41] H. Epstein, "Animal Husbandry of the Hottentots," 660.

were driven out, the Catholic church and nobility got hold of the merino flocks which produced the best type of wool then known anywhere.

During the latter part of the eighteenth century there was an ever growing demand for wool of an extremely fine fiber suitable for the manufacture of soft fabrics such as broadcloth. To meet this demand, merino flocks of Spanish origin, established in Saxony, Silesia, Prussia, Austria, and Italy, were bred for the single purpose of producing such fine wool. The flocks of Saxony in particular became world famous for the most marvelous fleeces ever known—wool of gemlike luster, so beautifully fine and even and of such exquisite downiness of touch that all other wools seemed base by the side of it.[42]

Social development in England favored the growing of wool, since the great plague of 1348 had reduced the number of laborers to such an extent that landowners were obliged to turn their lands into pastures. Wool became the sheet anchor of English farming. During the reign of Edward III (1327–1377), Flemish weavers, dyers, and fullers, skilled in the then most advanced methods of cloth making, were induced to settle in England by a grant of special protection. They were joined by others of their countrymen who came to England as refugees in the reign of Elizabeth.[43] However, climatic conditions did not encourage English farmers to produce so fine a wool as that of the Spanish merino; and at the time when the merino craze swept over Europe, the enormous industrial expansion and growth of urban populations caused such a rapid advance in land values that it no longer paid the English farmer to keep sheep for their wool alone. After the Napoleonic wars, England's export wool trade was cut away at its roots and English wool could not even hold its own in the home markets. By 1824, it had become unsalable in the face of competition by cheap Silesian and other German wools, and duties were unable to protect the local industry. The merino, therefore, could not gain a foothold in Britain and it is no coincidence that Robert Bakewell made a mutton breed of the Leicester sheep, with complete disregard for its wool, and that all the breeds of sheep subsequently evolved in Britain were of the mutton type. Wool could be grown more cheaply and profitably on the wide pastures of the colonies.

While this development started in Britain, then industrially the most advanced country, it did not end there. With the rise of industrialization, a similar development took place in central and western Europe. In Germany, within the nineteenth century the value of mutton increased five times in relation to the value of wool and the type of sheep bred in western Europe changed accordingly.

Even in Australia, New Zealand, and the Argentine, where the bulk of the wool was formerly produced by pure merinos, the rise in the importance of mutton, since the introduction of refrigerating plants in cargo vessels, has resulted in a large amount of crossbreeding and coarsening of the wool. The days have passed when in the more remote districts of Australia the value of a shorn sheep was approximately one shilling, that is, one fifth of the value of its annual yield of wool.[44] With the invention of combs that will comb comparatively short wool, long fine wool has become relatively less valuable than formerly. Manufacturers can now combine quality, length, and strength more cheaply and speedily than the wool grower can through breeding. Hence, sheep farmers no longer attempt to get into the fleece the maximum of fineness, length, and weight; and a different type of sheep producing a coarser wool and superior mutton, has gradually replaced the fine-wooled merino type all over the world.

[42] Robert H. Burns and E. L. Moody, "The Trek of the Golden Fleece," *Journal of Heredity*, 26: 433–443 (November, 1935).

[43] Walter C. Coffey, *Productive Sheep Husbandry* (3d ed., Chicago, 1937), 6–7.

[44] Friedrich Aereboe, *Allgemeine Landwirtschaftliche Betriebslehre* (6th ed., Berlin, 1923), 379.

POSTWAR DEVELOPMENTS IN WEST GERMAN AGRICULTURE, 1945–1953

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West German Agriculture in 1945. The area of the present West German Republic has long been a region of food deficit. For a century, industrialization has increasingly outpaced the productiveness of an agriculture not very well blessed as to topography, soil, and climate and plagued by a traditionalism which has caused the retention of outmoded methods. During this century, and particularly in recent times, reclamation of heath, moor, and swamp lands has added to the areas under cultivation, and the intensive use of chemical fertilizers has brought up average yields. On the other hand, government policies for protection, subsidization, and market control of farm products have insulated the German farmer from outside competition and have lessened his incentive to increase production and adopt new techniques. The maximum annual production of food in all Germany in the period between the two world wars was never greater than 85 per cent of consumption, and even this degree of production was based on large imports of fodder grain and other livestock feed. The food products of East Germany, the one part of the nation which had had an agricultural surplus, were largely lost for West Germany after 1945, while an ingress of refugees from East Germany and of "ethnic German" expellees from other regions of Eastern Europe increased by more than ten million the number of consumers in West Germany.

There was, at the war's end, an acute need for greater food supplies in West Germany. Shortage of labor and fertilizer, the breakdown of transportation, money inflation, and other dislocations, as well as military destruction, had brought down both production and the availability of agricultural produce to the consumer. However, a number of factors, old and new, militated against recovery and expansion. Even under more favorable conditions, the traditionalism of most German farmers would have made changes slow and difficult. To them, agriculture was a way of life rather than merely an economic enterprise. As one American observer stated, "Labor is a constant and is taken for granted, whereas the quality and fertility of the soil and the weather are the variables."[1] Furthermore, the predominant type of agriculture, a highly variegated mixed farming, was not one to which specialization or mechanization could be easily applied.[2] The typical German farmer in 1945 preferred horses to tractors and the labor of his wife and children to that of a machine, particularly as such sources of power had proved most reliable in times of dislocation. Moreover, he was naturally fearful of the temporary insecurity which might result from changes in existing techniques and methods.

One handicap to the modernization of West German agriculture has been the smallness and fragmentation of the farms. Nearly nine tenths of the farm holdings in 1950 were under 20 hectares (50 acres) in size, and a great many were so small as to be uneconomic in operation, even under existing conditions. Even worse was the division of individual holdings. A family farm of ten hectares was often divided into 20 or 30 parcels, separated by considerable distances and connected by roads which occupied tillable land. It was estimated that one fourth of the average farmer's working time was spent in traveling from plot to plot.[3] The Allied occupation authorities recognized that such conditions caused high production costs, but also that only public investment on a large scale could bring about a consolidation of holdings.[4]

[1] Food, Agriculture, and Forestry Branch, Economic Affairs Division, Office of Land Commissioner for Bavaria, *The Food, Agriculture and Forestry Situation and Program, Bavaria and Western Germany, Handbook and Digest* (July, 1950), 1:1.

[2] See Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "Agricultural Reporting Schedule Request No. 00A156, Farm Machinery," December 12, 1950, pp. 3–4.

[3] U. S.-British Bipartite Food and Agriculture Panel, *Food and Agriculture, U. S.-U. K. Zones of Germany* (Berlin, February, 1947), 5–6.

[4] Bipartite Control Office, Food, Agriculture, and

During the first years after the war, short-term factors also operated against any rapid recovery. Soils were partially exhausted, and there were no fertilizers immediately available except natural ones in insufficient quantity. War had devastated the crops of various areas and had prevented many farmers from planting in the spring of 1945. There were severe shortages of seeds and storage facilities, and transportation had been destroyed. The few agricultural officials who had remained at their posts were bewildered and lacked authority.[5] Other short-term factors were the shortages of tools, machinery, and supplies, and, until the currency reform of 1948, the worthlessness of the circulating medium. Time and effort would gradually improve short-term conditions, but the long-term ones could be attacked only later when finances were provided by foreign aid and from the improving German economy.

The Impact of Allied Military Government, 1945–49. The world shortage of food and the need to avoid "disease and unrest" indicated to the Allied occupation authorities from the start the necessity of increasing food production. To these factors was added one of increasing importance, the desire to cut down on the amount of food purchased through foreign aid. During the years of American, British, and French military government, 1945–1949, West German agriculture slowly recovered. Much of this was normal, but the process would have been slower except for Allied aid and direction. In practice, the aid was more productive of results than was the direction.

At the end of 1944, the integrated American and British military staff issued orders that German authorities should provide production programs "on the same basis as prior to the occupation." This meant the continuation of the controls which had regulated hectarage sown to given crops, number of livestock kept, delivery quotas and dates, and allocation of agricultural requisites.[6] After the division of Germany, each of the Western Allies adopted similar rules for its zone. The general confusion, the lack of agricultural essentials, and the fact that most planting for 1945 was already done prevented any application of widespread plans in that year. Plans for 1946 provided for a substantial increase in hectarage of direct-consumption crops, reduction of livestock, and a corresponding decrease in hectarage devoted to feed and fodder crops.[7] In succeeding years, new plans were devised for each zone, those for the U. S. and British zones of 1948 and 1949 being identical under the bizonal arrangement. The various plans were in practice largely devised and enforced, so far as they could be enforced, by *Land* (state) authorities under the supervision of the Allied military governments.

The emphasis on high-calory crops and on fruits and vegetables which could be stored for the winter was common to the plans made during the four years of military government. The basic policy was that of placing the production of food for human consumption above that for animal feed, and in its first and most effective year it coincided with a reduction in livestock numbers. Some changes in policy were discernible in the bizonal plan for the last year, that for the year preceding the harvest of 1949,[8] and the concessions which it made to reality were reflected in plans made for the French zone. Instead of having compulsory hectarages, individual farmers were given production quotas, partly in specific crops and partly open to substitution. This had the effect of placing less emphasis on bread grains. Provision was also made for a sizable increase in livestock numbers, particularly of sheep. The trend toward long-term policies reflected basic ideas of the Economic Cooperation Administration (ECA), which was at this time coming into operation.

Despite the effort and detailed supervision which went into the forming and implementing of these programs, neither the military governments nor German officials had any marked success in changing the production

Forestry Group, "Food Production Targets and Their Achievement by 1952–53," May 31, 1949.

[5] Paul F. Taggert, Chief, Food and Agriculture Branch, Office of Military Government for Wuerttemberg-Baden, "Annual Report, Food and Agriculture, Period Ending 30 June, 1946," p. 1.

[6] *SHAEF, Handbook for Military Government in Germany Prior to Defeat or Surrender, Incorporating Revision I, December 20, 1944,* Chap. XI, paragraphs 895, 897, and 904.

[7] For the plan for the U. S. Zone, see "Agriculture Production Plan, U. S. Zone, 1945–46," January 11, 1946.

[8] BICO/SEC (48) 381, "Livestock Policy for Bizonal Germany for 1948–49," June 22, 1948; BIPF A/11/3, "Crop Production Plan for 1948–49," August 2, 1948.

pattern. A bizonal report in mid-1948 stated that there had been a "modest upward trend in plantings of bread grains, potatoes, pulses, sugar beets, and vegetables, and, on the other hand, a slight decrease in grassland and a reduction in the area under fodder crops." The same report showed that "in the face of considerable opposition," cattle, hog, and poultry numbers had been reduced.[9] But the small changes were only temporary, and even the reduction in livestock numbers was probably due as much to the severe drought of 1947 as to the imposed controls. Collection quotas of early years were sufficiently well enforced, however, to bring a fair proportion of the food produced into legitimate channels.[10]

In the very nature of the case, the production goals which were set up could not be enforced. Until the reform of June 1948, the currency in circulation was nearly worthless to German farmers, except to buy agricultural requisites, which were for the most part apportioned, and rationed articles, not greatly needed by them in any case. The distribution of fertilizer in accordance with fulfillment of over-all planting quotas was tried on occasion with some success, as was the giving of sugar bonuses to those who planted their potato hectarage assignments.[11] These, however, were only temporary successes, and in limited areas. Even the extent of curtailment of livestock numbers was overstated, for in many areas grain was fed to cattle and hogs not reported in the statistics. These were eventually sold on the black market or were retained by the farmers as a basis for later livestock expansion. In general, and quite aside from the fact that crop yields were poor for the first three occupation years, the production goal scheme was largely a failure. Only police state methods could have enforced it. Moreover, the "hands off" policy pursued during the last year of military government reduced production plans to little more than paper proposals. Bread grain hectarage in 1949 was only 84 per cent of prewar, and potatoes 97 per cent. On the other hand, the hectarage devoted to fodder root crops, meadows, and pastures was greater than before the war.[12]

More success attended the program of making available agricultural requisites. Domestic production of fertilizer had been virtually stopped and importation entirely so at the end of the war. Shortage of fertilizers was one of the causes of the short crop yields of 1946 and 1947. Fertilizer manufacture was retarded by the shortage of coal, poor transportation, and, as a consequence of the near worthlessness of the Reichsmark currency, lack of incentive for labor. Fertilizer consumption in the U. S. and British zones in 1945–46 was less than one fourth of the 1938–39 level, and that in 1946–47 was about one half of that level. By the last year of military government, however, prewar levels were nearly equaled. The rapid increase was made possible by the revival of domestic production, partly as the result of the conversion of munitions plants into fertilizer factories, and by the accelerated program for fertilizer imports through foreign aid.

Obtaining an adequate supply of seeds was also a serious problem. Areas of Germany which had formerly supplied a considerable portion of farm seed needs were now behind the Iron Curtain, and lack of means of payment cut off for the most part other sources of supply. Quadripartite negotiations failed to free Soviet zone imports, and the supply of seeds had to depend on emergency shipments from abroad and on West German production, which had also been disrupted by the war. Foreign aid purchases were very large during each of the military government years, and a system of rationing and rigid controls over seed dealers was maintained. Domestic production was fostered by the formation of seed breeding associations for grading and certification of seeds and by price incentives for production of seeds in short supply.[13] Shortages of insecticides and fungicides, at first acute, were remedied through

[9] Food, Agriculture, and Forestry Group, Bipartite Control Office, "Annual Report to Food and Agriculture Organization of the United Nations, Bizonal Area, Germany, 1948."

[10] Interview with William F. Doering, Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, August 23, 1951. The writer wishes to express his debt to Mr. Doering, both for his part in preparing several of the official reports cited below and for his willing cooperation in supplying information and giving advice.

[11] *Ibid.*

[12] ECA Special Mission to Western Germany, "1949 Annual Report on Food, Agriculture, and Forestry in Western Germany," January 11, 1950, pp. 4–5.

[13] *Ibid.*, 10.

TABLE 1

	1935–38	1948	1949
Bread Grains	2,861,000	2,441,000(85)	2,413,000(84)
Feed Grains	2,291,000	1,762,000(77)	1,829,000(80)
Potatoes	1,162,000	1,151,000(99)	1,124,000(97)
Fodder Roots	617,000	700,000(113)	689,000(112)
Sugar Beets	130,000	157,000(121)	167,000(128)
Pulses	91,000	140,000(154)	123,000(135)
Field Vegetables	70,000	128,000(183)	87,000(124)
Oilseeds	27,000	69,000(256)	91,000(337)
Fodder Plants	1,223,000	1,291,000(106)	1,389,000(114)
Permanent Meadows	3,524,000	3,524,000(100)	3,579,000(102)
Permanent Pasture	1,909,000	1,953,000(102)	1,893,000(99)[14]

foreign aid shipments and the promotion of domestic production.

West German Agriculture, 1945–49. The farmers were hurt less by the devastation of war and the unbalanced economy thereafter than any other major economic group in West Germany. By 1949, the pattern as to farm management, techniques, and crop practices, was about the same as a decade earlier, except for some changes dictated by price relationships. The inefficiency of their methods and their inability to compete with the agriculture of neighboring countries without governmental protection gave concern to everyone who was involved in the economic recovery of Germany.

Table 1 shows estimated hectarage and percentagewise comparisons of 1948 and 1949 crops with those of the prewar period. Part of the decline shown for grain cultivation was perhaps due to statistical bias, but there had been an undoubted trend in the direction indicated. Feed grains had tended to increase in comparison with bread grains. This, as well as the rise in fodder crops, reflected the fact that the raising of livestock was encouraged by favorable price factors. Hectarages of potatoes and root crops would doubtless have been higher except that imported grains were made cheap by an import subsidy. Oilseed expansion was due to a subsidy of 100 per cent above a fixed market price. Increased sugar beet growing was due to protection and sudsidies.

Statistical returns for the harvests of 1946 and 1947 are of questionable accuracy; but it is clear that production was low for all crops. In 1948, however, crops, particularly of grain, were considerably above expectations. In 1949, production was even larger, that of grains approaching prewar levels on less than prewar hectarage. The increases were due to favorable weather and a greater use of fertilizer. Estimates in metric tons for prewar years and for 1948 and 1949 are given in Table 2. The figures in parentheses relate the crops percentagewise the prewar averages.

TABLE 2

	1935–38	1948	1949
Bread Grains	5,689,000	4,828,000(85)	5,954,000(105)
Feed Grains	4,798,000	3,097,000(65)	4,267,000(89)
Potatoes	19,538,000	23,547,000(121)	20,875,000(107)
Fodder Roots	26,004,000	23,129,000(89)	21,765,000(84)
Sugar Beets	4,253,000	4,720,000(111)	4,735,000(111)
Pulses	168,000	.....	195,000(116)
Field Vegetables	.....	.....	1,290,000
Oilseeds	45,000	86,000(191)	149,000(331)[15]

[14] German Federal Ministry of Food, Agriculture, and Forestry, *Agrarstatistische Unterlagen ueber Bodenbenutzung, Ernten, Viehbestand*, April, 1951, and *Statistischer Monatsbericht*, April, 1951.

[15] *Ibid.*

TABLE 3

	1935–38	1947	1948	1949
Total Cattle	12,114,300	10,291,400	10,572,600	10,882,600
Milk Cows	5,990,200	5,240,500	5,264,900	5,535,000
Total Hogs	12,494,000	5,516,300	6,758,000	9,697,700
Pregnant Sows	1,027,500	667,000	830,000	883,000
Sheep	1,888,700	2,352,300	2,492,000	2,019,600
Goats	1,376,100	1,248,300	1,428,200	1,444,700
Horses	1,541,500	1,577,400	1,618,000	1,629,400
Total Chickens	51,124,000	22,299,000	25,182,000	39,957,000
Laying Hens	32,870,000	11,512,000	13,470,000	20,042,000
Geese	2,218,000	1,957,000	2,178,000	2,807,000
Ducks	1,081,000	380,000	505,000	988,000
Other Poultry	171,000	250,000	366,000	464,000
Beehives	1,428,000	940,000	1,090,000	1,521,000[16]

Livestock estimates for the postwar years, when farmers were attempting, with some success, to understate numbers, have little validity, particularly for hogs and sheep. For what they are worth, however, they are given in Table 3 for the years 1947, 1948, and 1949. Prewar averages are also given as a base of comparison. The statistics are for the month of December in each case.

About one third of the milk cows were also used as draft animals. The increase in horse population reflected the conservatism of West German farmers, the prestige value of owning horses, and the unavailability of tractors and fuel oil. The year 1949 was to prove the peak year for horse numbers. The increase ran counter to the desires of the military government advisers, who had hoped that the number would decline and thus release hay and forage lands for human food crops. They also frowned upon the postwar increase in the numbers of sheep, which had resulted from high wool and mutton prices.

The German figures given as indices of total agricultural production are subject to criticism as to accuracy, and it is probable that they are low for each of the postwar years. Using the 1935–38 average as a base figure of 100, the index for the crop year 1948–49 has been reckoned as 83 and that for 1949–50 as 90.[17]

[16] German Federal Ministry of Food, Agriculture, and Forestry, *Statistischer Monatsbericht*, February, 1952.

[17] ECA Special Mission to Western Germany, "1950 Annual Report on Food, Agriculture, and Forestry in Western Germany," January 30, 1951, pp. 17–18.

The recovery of West German agriculture was paralleled by the rise of farmer organizations. The last year of military government was one in which such groups in general became stronger, but also a year in which one organization, the *Bauernverband*, became dominant in many fields. This organization was a new one, born since the war, and its rapid rise was symptomatic of West German agriculture's feeling of insecurity. Aggressively led by Dr. Andreas Hermes, former Minister of Agriculture under the Weimar Republic, the *Bauernverband*, by backing and giving voice to the economic desires of small West German farmers, had brought to heel most other farm groups.

In early 1948, the *Bauernverband*, due to military government opposition, had failed to gain control over the giving of agricultural exhibitions. Instead, this function was restored to the revived German Agricultural Society. However, the new group won a more important battle in regard to the Federation of Agricultural Cooperative Associations. By 1949, the West German farm cooperatives were following its policy line, and the Federation had made Dr. Hermes its president. Furthermore, in most of the *Laender*, the *Bauernverband* now shared the direction of agriculture with the reconstituted Agricultural Chambers, and was making some progress in its fight to control agricultural education and extension. By the end of 1949, the *Bauernverband* was recognized as being particularly successful in the legislative field.

This success was due to a number of factors. The *Bauernverband* from its start was a champion of agricultural protection, desired

by the small farmers, who were fearful of the effects of trade liberalization and who tended to vote as a bloc on matters affecting their interests. The result was that the leaders of the organization secured an enviable political position, despite the fact that the farm vote was only one fifth of the total vote in West Germany. Furthermore, Dr. Hermes had pushed through the Bizonal Economic Council in early 1948 an ordinance which provided for the levying of compulsory fees on all agricultural land for three years and for the handing over to the *Bauernverband* a portion of the proceeds to finance certain of its activities. When the new West German Federal Government was established in late 1949, Dr. Hermes was able to place a number of *Bauernverband* leaders in prominent positions in the Ministry of Food, Agriculture, and Forestry.

The strongest rival of the *Bauernverband* on the national level was the Association of Agricultural Chambers. The *Land* Agricultural Chambers, which had been outlawed by the Nazis, had staged a comeback by 1949, except in Bavaria and Wuerttemberg-Baden, which had never had such organizations. One of the most important functions of the Chambers had been the supervision of agricultural extension and vocational training in agriculture. Now, however, the *Bauernverband* contested this field with the Chambers in many of the *Laender*. In Lower Saxony, North Rhine-Westphalia, and Hesse, it had by 1949 partially nullified the independence of the Chambers through infiltration of their bureaucracy.[18]

The relationship of the Association of Agricultural Chambers to the German Agricultural Society was close, and the two organizations had a common president. The latter by 1949 had re-established itself as a non-political, quasi-scientific group. Its chief functions consisted of arranging agricultural fairs and exhibits and organizing national and regional conferences of farmers. Among its other activities, the Society by the end of 1949 had held three national agricultural fairs. It had successfully resisted any encroachment by the *Bauernverband* so far as its own specialized activities were concerned.

[18] Interview with Conrad H. Hammar, Deputy Chief, Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, April 7, 1952.

A number of other agricultural organizations had made an appearance. As previously mentioned, the Federation of Agricultural Cooperative Associations had been tied closely to the *Bauernverband*. Farmers' cooperatives in West Germany had recovered rapidly from their eclipse of Nazi days. The Farm Women's Association, which had also been suppressed, was refounded in 1946–47 on a *Land* basis, and in 1948, established a national organization. This had close ties with the *Bauernverband*, as did the *Landjugend* or Farm Youth Organization. The German Farm Women's Association, among other things, sponsored home economics training and other programs to raise the status of farm women and to increase the application of modern techniques in the West German farm household.[19]

Agriculture and the West German Government. Ostensibly to lessen the risks for an economically fundamental section of the population, the National Socialist Government of Germany had practically abolished *laissez-faire* for agriculture. Prices were regulated to give the farmer adequate purchasing power, agricultural imports were strictly curtailed, and financial encouragement was given through the payment of subsidies and other means. In order to stop the further parceling of land through inheritance and to keep the farms in the hands of family units, a Hereditary Farm Law was passed in 1933. This and succeeding legislation restricted inheritance in most cases to one son and virtually prevented the mortgage or sale of farm land.

By another law of 1933, all farmer organizations were dissolved or absorbed into the *Reichsnaehrstand* (Reich Food Estate), a public corporation under government supervision. Farmer participation was purely nominal. There were *Reichsnaehrstand* units at each government level, with regulatory functions covering every phase of the farmer's economic existence. The aim was to develop and perpetuate the farming class as a sound and conservative counterbalance to the less stable population of the urban centers. The farmer and his wife, clinging tenaciously to their inherited farm and their old ways of

[19] ECA Special Mission to Western Germany, "1949 Annual Report on Food, Agriculture, and Forestry in Western Germany," 22–27.

life, were to dedicate themselves to the production of food and children for the glory of the Third Reich.

In order to stabilize and more effectively control agricultural markets, all enterprises involved in the production, processing, and marketing of each basic food item or class of items were organized into a special market union, which received its directions from the Reichsmaehrstand. The working of the system as to dairying will serve as an example. All producers of a given area were required to sell their milk to a specified dairy. The method of utilizing the milk and the price paid to the farmer were subject to regulation. An equalization fee was charged those farmers whose milk could be marketed in liquid form, and a subsidy paid to those whose produce must be made into butter and cheese. The marketing of other agricultural products was similarly organized, restricted, and insulated from competition.[20]

Military collapse in 1945 brought disintegration of the *Reichsnaehrstand,* although some of the *Laender* for a time used the field units for the collection and distribution of food. Formal dissolution in West Germany came in January 1948, through an ordinance of the Economic Council of the Bizonal Area. This legislation made illegal all marketing organizations with compulsory membership and quasi-governmental powers.[21] The general attack on Nazi farm policies by the Allies had already led to the repeal of the Hereditary Farm Law by the Allied Control Council in early 1947.[22]

Food and agriculture organizations, first on a *Land* basis, then on a zonal one, were established to take responsibility, under military government supervision, for administering programs for control of agricultural production and food distribution. The economic merger of the British and U. S. zones, beginning in September 1947, placed central supervision of food and agriculture matters under a Bizonal Food and Agriculture Administration at Frankfurt. Thus, many of the functions of the *Reichsnaehrstand* were taken over by regularly constituted governmental agencies. In theory, at least, farm associations henceforth should have voluntary membership, should have only advisory functions, and should not be given authority to execute governmental regulatory powers.

The new West German Federal Republic, born in September 1949, absorbed and reorganized the Bizonal Food and Agriculture Administration, thus creating a Federal Ministry of Food, Agriculture, and Forestry. The Federal Minister who heads this organization is a political appointee and serves as a member of the Chancellor's Cabinet. Subsidiary to the Ministry of Food, Agriculture, and Forestry, but with very important functions, is the Foreign Trade Agency for Food and Agricultural Products. The first Minister was Dr. Wilhelm Niklas, previously Deputy Director of the Bizonal Food and Agriculture Administration, and before that an official in the Bavarian Ministry of Agriculture. As his health declined, his Deputy Minister, Dr. Theodor Sonnemann, outstanding as a protectionist, came to the fore. Dr. Niklas was replaced by Dr. Heinrich Luebke, a North German agricultural leader, on October 13, 1953.

The Adenauer Cabinet stated at once that, as a part of its aim for a free-enterprise economy, it would shift emphasis from the control and rationing of food to that of increasing food production. Plans included reduction of controls, stabilization of prices, encouragement of mechanization and intensification, and emphasis on agricultural education. In practice, however, the new government was slow to disturb the existing agricultural pattern, chiefly because it feared the effect of rising prices on the consumer. In early 1951, a coalition farm bloc in the *Bundestag* demanded that fixed prices be replaced by ceiling prices, and proposed an increase of grain, feed, sugar, milk, and fat prices to world levels.[23] The ECA Special Mission in Western Germany also urged raising grain prices in order to give farmers a price incentive, and the government responded by raising wheat and rye prices to some degree. In the main, however, it turned to a system of subsidies and subventions.

The heart of the program which it devised

[20] Wilhelm Saure, *Der Reichsnaehrstand, Aufbau, Aufgaben und Bedeutung* (Berlin, 1936), *passim.*

[21] BICO /Memo (48), February 26, 1948.

[22] OMGUS, Monthly Report of the Military Governor, No. 20, "Food and Agriculture (Cumulative Review, March 1–February 28, 1947)," 17.

[23] *Sueddeutsche Zeitung* (Munich), February 24–25, 1951; *Frankfurter Allegemeine,* February 24, 28, 1951.

was a system of import equalization, which was in effect until June 30, 1950, under specific legislation, and which was later resumed in practice under a series of "marketing laws." Subsidies were paid for the import of goods for which the domestic prices were to be kept below world prices, while charges were assessed on other items. This plan kept down consumer prices on such necessities as bread, grains, margarine, and sugar, and caused higher prices on less essential foods. On these latter items, the farmer was protected from outside competition, while the differentials on grains were made up by direct subsidies, preferential freight rates, and reduction of fertilizer and fuel oil prices. National legislation attempted to protect both the consumer and the farmer by controlling imports and by the stockpiling and timely release of foodstuff stores.[24] Such a program had the full support of farm organizations. The *Bauernverband,* in particular, contended that the transition from a controlled economy to a free economy, must be accomplished "without severe dislocations of agriculture."[25]

There were some protests from consumer groups, but no sustained program was devised for opposing this type of agricultural protectionism. On the other hand, once their policies were adopted, agricultural leaders showed some moderation as to their demands in practice. Direct subsidy and price support payments to farmers reached a peak in the fiscal year ending March 31, 1952, and declined rapidly thereafter. On the other hand, receipts resulting from equalization charges rose in 1953. The increase in returns from such "skimming" reflected an increasing degree of protection given to domestic production by the price control program. An important development, as world prices dropped, was the gradual change-over of grains and sugar from the category of heavily-subsidized items to that of products protected by "skimming." The net effect was to give the German farmer considerable protection as to prices, but not to the extent which many marginal small farmers wished.[26]

The Ministry, under pressure of the farm organizations, also adopted a course in general counter to that of trade liberalization for foodstuffs. As liberalized bilateral trade agreements and multilateral liberalization through the OEEC began to take effect, farm groups voiced their protests. In response, the Ministry, in one way or another, interfered for longer or shorter periods with the flow into Germany of foreign foodstuffs. In addition to import equalization, such devices were used as temporary embargoes, pressure to restrict foreign exchange releases, agreements with other countries to delay or limit food export licenses, strict controls ostensibly to keep out foodstuffs dangerous to human or animal health, and finally, tariff protection. Farm representatives sat in on trade agreement conferences, and were often successful in keeping crucial items under quota. Considerable ingenuity was shown in contravening the effects of trade liberalization so far as it might affect the German farmer.[27] Nevertheless, the general trend toward the unfreezing of trade affected even those imports which might compete with West German farm products. During 1953, in particular, the lengthening of lists not subject to quota requirements increased markedly the liberalization of trade with OEEC nations, to some extent that with European Payments Union countries not belonging to the OEEC, and even to a degree that with the dollar area. West Germany continued in 1953 its adherence to international arrangements as to commerce in wheat.[28]

Tariff legislation in West Germany, as it affected agriculture, was slow in formulation. At the time of the advent of the new government, ordinances were in effect which gave tariff exemption to nearly all food imports. However, the practice of equalization had the effect of more or less canceling out these exemptions until June 30, 1950. During this

[24] Wilhelm Niklas, *Sorgen um das taegliche Brot, von der Regierungserklaerung 1949 bis zu den Marktordnungsgesetzen 1951* (Bonn, 1951), 147–153.

[25] Annual Report of the Bauernverband of Wuerttemberg-Baden, April 29, 1951.

[26] See Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "Annual Agricultural Report, 1953," pp. 48–50. Contributors to this report are listed in the document. The drafting officer was William F. Doering.

[27] See Hubert G. Schmidt, *The Liberalization of West German Foreign Trade, 1949–1951* (Historical Division, Office of the U. S. High Commissioner for Germany, 1952), 64–76.

[28] Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "Annual Agricultural Report, 1953," p. 50.

period, the government struggled to bring forth a new tariff law on agricultural imports, but the headlong collision of the forces working for liberalization with the protectionist farm leaders led to an impasse. Tariff rates by decree of the Minister of Finance therefore became the order of the day. In late 1950, a West German draft tariff was approved at the General Agreement on Trade and Tariffs (GATT) meetings at Torquay, England. In the following spring the Minister of Finance promulgated a new tariff list supposedly in harmony with the Torquay agreement, and in September 1951, a tariff law was at last passed. Though its uniform ad valorem schedules corresponded generally with GATT principles, the agricultural sections showed the heavy influence of farm leaders. Fodder grains came in free of duty, but most items produced in West Germany received considerable protection. Nevertheless, the level of the rates compared favorably with those of neighboring countries, and for that matter with those of the United States.[29] The fairly moderate policy which was adopted was a result of compromise between conflicting interests in the nation. At the same time, it reflected a lessening fear of foreign competition on the part of German agriculture.

Under the federal system, much farm legislation is left up to the *Laender,* but an attempt to coordinate *Land* programs at the federal level was made from the beginning. For instance, the need to improve and harmonize the quality standards of agricultural products was answered by a federal law at the end of 1951[30] and by further legislation in 1953.[31] Responses of the *Laender* to Marshall Plan aid led to fundamental federal agricultural legislation in many fields.[32] The need for a basic law which would give a general statement of federal agricultural policies caused protracted discussion,[33] but no legislation resulted because of the disagreements as to fundamentals. Nevertheless, specific laws showed a governmental concern for general agricultural problems. For instance, legislation of 1953 relating to land consolidation and agricultural credits, while not going far in providing solutions, showed a tendency toward coordination at the federal level. The "Luebke Plan" at the end of that year foreshadowed a drive on the part of the new Federal Minister to tackle these and other basic questions, and at the same time to gradually lessen the protection given West German agriculture.[34]

West German Agriculture and the Marshall Plan. West German agriculture was a beneficiary of the Marshall Plan to a considerable degree. American and German officials were agreed from the beginning that aid to agriculture should be used, so far as possible, for an attack on basic problems. However, the working out of the details for each of the periodic programs was no easy task. The four programs which were evolved between the latter part of 1949 and the end of 1952 tended to merge in practice. Luckily, there were few shifts in personnel in either the Federal Ministry of Food, Agriculture, and Forestry or in the Food and Agriculture Division of the Office of the U. S. High Commissioner for Germany.

The latter group, which served as the representative of ECA, and of its successive transformations, MSA and FOA, in West Germany, had from its first organization in the fall of 1949 a vigorous program for utilization of aid to agriculture. Its principal targets can be put under five headings: "(1) Increasing the yields of greenland and fodder crops; (2) increasing the yields of grains and root crops; (3) increasing milk production and improving the quality of milk and other perishables; (4) improving the efficiency of livestock feeding; (5) increasing farm mechanization, as a means of increasing food production and reducing fodder requirements."[35] This broad program, which was

[29] *Bundesgesetzblatt,* Teil I, 1951, No. 42, September 3, 1951; interviews with H. W. Prentice, Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, October 4, and November 4, 1951.

[30] *Bundesgesetzblatt,* Teil I, No. 60, December 19, 1951, pp. 970–971.

[31] Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "Annual Agricultural Report, 1953," p. 49.

[32] See Hubert G. Schmidt, *Food and Agriculture Programs in West Germany, 1949–1951* (Historical Division, Office of the U. S. High Commissioner for Germany, 1952), *passim.*

[33] *Ibid.,* 89.

[34] Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "Annual Report, 1953," pp. 49–60.

[35] Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "1952 Annual Agricultural Report," 52.

carried to a conclusion in 1952, included both credits and grants-in-aid. The credits set up revolving funds for the lending of money to farmers for specific purposes. The grants-in-aid were outright gifts of funds to be spent for projects for promoting new methods and techniques on West German farms. In both cases, West German governmental agencies were required to put up additional funds on a matching basis.

During the period, counterpart funds released for use as agricultural credits amounted to DM 381,505,000, or approximately 77 per cent of total releases for agriculture. These credits were broken up into a number of main categories as to purpose. Those for improvement of farm inventories included loans for reconstruction of farm buildings; purchase of livestock, farm machinery, etc.; cooperative purchase of farm machinery; plant and seed breeding; purchase of irrigation and liquid manure distribution equipment; construction of potato warehouses and potato boilers; and creation of emergency capital in war-torn areas. Land use improvement credits included those for land consolidation, land reclamation and drainage, and reforestation. Credits for food processing distribution, and marketing were distributed among projects for dairy modernization, fruit and vegetable marketing, increase in storage and marketing facilities, enlargement and construction of sugar beet factories, improvements in the marketing of fish, and other projects of food processors. Other categories were rural refugee resettlement, construction of experimental plants, purchase of fishing boats, financing of a federal educational information service, and food processing credits in West Berlin.[36]

Each of the periodic programs, except the first, also included grants-in-aid. The total amount of such direct benefits, as of the end of 1952, was DM 113,500,000, or approximately 23 per cent of all counterpart aid to West German agriculture. A breakdown of this amount gives the following approximations: 21 per cent for promotion of crop production; 17 per cent for promotion of livestock production; 13 per cent for land consolidation; 41 per cent for agricultural advising, education, and research; 5 per cent for refugee settlement; 1 per cent for West Berlin; and the remaining 2 per cent for administration and special projects.[37] All grants from Marshall Plan counterpart funds were matched or more than matched from German sources.

The grants for the promotion of crop and livestock production were directed toward weaker sectors of West German agriculture. Substantial sums were utilized for improving pastures and meadows, for promotion of artificial insemination of cattle, and for eradication of bovine tuberculosis in pilot districts. Large grants for land consolidation and smaller ones for refugee settlement were made to aid specific projects. Large grants in the fields of education and research were designed to introduce modern agricultural extension methods, to improve and increase agricultural education, and to bring West Germany up to date as to agricultural experimentation and research.[38] Except for the relatively few federal projects, grants-in-aid were divided among the various *Laender*.

The above figures do not include funds for the agricultural portions of the cultural exchange and technical assistance programs. These programs included the sending of American consultants to West Germany, the reverse one of sending German observers to the United States, the sending of trainees in agriculture and home economics to American schools, and the sending of rural teen-agers to live in American homes. These programs, it seems clear, accomplished a great deal in proportion to the money expended on them.[39]

To the observer, it seems that American aid was a worth-while investment in the rehabilitation and modernization of West German agriculture. Without the use of these funds and the use of the federal and *Land* funds which were appropriated to match them, agricultural credits would have been in extremely short supply; programs for agricultural research, agricultural information services, and improvement of agricultural and home economics education and extension would have been retarded; other very successful programs for improvement of techniques would

[36] *Ibid.*, 54–55.

[37] *Ibid.*, 57.

[38] Schmidt, *Food and Agriculture Programs in West Germany, 1949–1951*, pp. 149–183, *passim*.

[39] See *ibid.*, 183–192; Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "1952 Annual Agricultural Report," 71–78.

TABLE 4

	1935–38	1950	1951	1952	1953
Bread Grains	5,689,000	5,792,000(102)	6,145,000(108)	6,581,000(116)	6,638,000(117)
Feed Grains	4,798,000	4,414,000(92)	5,029,000(105)	4,904,000(102)	5,313,000(111)
Potatoes	19,538,000	27,958,000(143)	24,103,000(123)	23,854,000(122)	24,535,000(125)
Fodder Roots	26,004,000	29,362,000(113)	26,411,000(102)	18,426,000(71)	23,306,000(90)
Sugar Beets	4,253,000	6,975,000(164)	7,291,000(171)	6,845,000(163)	8,835,000(208)
Pulses	168,000	147,000(88)	134,000(80)	105,300(63)	109,700(65)
Field Vegetables	.....	1,357,000	1,052,000	1,075,000	1,321,000
Oilseeds	45,000	84,000(187)	90,000(200)	58,000(129)	33,000(73)[40]

not have been initiated; and the exchange of experts and trainees would not have been carried out. In general, the aid was of a kind with far-reaching results.

Agricultural Production, 1949–53. Blessed with generally favorable weather, a plentiful supply of fertilizer and other requisites, and good market conditions, West German agriculture prospered after 1949. Table 4 summarizes annual crop yields in metric tons and compares these quantitatively and percentagewise with prewar years. The decline in fodder crops in 1952 and 1953 was due to midsummer droughts, which also cut the hay crop in 1952. The decline in oilseed production in 1952 was a result of the fact that the large crop of the previous year had created a market glut. The acreage for 1953 was further reduced, and production fell below prewar.[41]

Changes in livestock numbers are shown in Table 5, December figures being used in all cases. The slowing down in the rate of increase in cattle, particularly of milk cattle, reflected the dissatisfaction with prices of dairy products. Hog numbers decreased after 1951 because of price factors. The steady decline in horse population was due to an increasing use of power machinery. Prewar levels for poultry numbers were passed in 1952. Egg production was especially profitable in that year because of import duties and because of decreased supply in neighboring countries. More than two thirds of the total value of farm production was accounted for by livestock products during this period, as had been the case before the war.

Agricultural production indices show that the general level had risen considerably above prewar, but there were indications that a plateau was being approached. Approximate

TABLE 5

	1935–38	1950	1951	1952	1953
Total Cattle	12,114,300	11,148,500	11,375,100	11,632,000	11,641,000
Milk Cows	5,990,200	5,734,100	5,803,800	5,817,000	5,863,000
Total Hogs	12,494,000	11,890,400	13,603,100	12,972,000	12,435,000
Pregnant Sows	1,027,000	1,113,000	1,050,000	1,005,000	1,070,000
Sheep	1,888,700	1,642,500	1,665,900	1,554,000	1,352,000
Horses	1,541,500	1,570,400	1,454,700	1,360,000	1,271,000
Total Chickens	51,124,000	48,063,700	50,675,900	51,246,000	59,097,000
Laying Hens	48,115,000	44,761,000	47,465,000	48,246,000	52,278,000
Geese	2,218,000	2,419,000	2,259,100	2,086,000	.....
Ducks	1,081,000	902,100	971,000	999,000	.....
Other Poultry	171,000	416,000	365,000	324,000	.....[42]

[40] West German Federal Ministry of Food, Agriculture, and Forestry, *Statistischer Monatsbericht*, February, 1952, October 9, 1953; Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "Annual Agricultural Report, 1953," p. 4.

[41] See Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "Crop Conditions," October 22, 1953.

[42] Food and Agricultural Division, U. S. High Commissioner for Germany, annual reports, *passim*.

indices for gross crop production, based on the 1935–38 level, were 102 for 1950–51, 108 for 1951–52, 101 for 1952–53, and 109 for 1953–54.[43]

General Considerations. Agricultural production in West Germany during the postwar years rose rapidly, but not so phenomenally as that of industry. The increase in crop yields was a result of higher production per unit rather than of an increase in hectarage. There was, in fact, a slow increase in the amount of land devoted to pastures, meadows, orchards, and gardens at the expense of crop land, and a trend back to a greater emphasis on livestock despite the continuous deficit of bread grains and other food crops. The economic advantage of raising livestock helped make popular "greenland improvement" programs, which brought up the yields of pastures and meadows. Hopes of the experts that there would be a switch of some of the greenland to crops for direct human consumption did not develop. In 1953, approximately one third of the land space of West Germany was arable land and almost one fourth was pastures and meadows.[44]

A study of the farm size pattern during this period indicates the difficulty of modernizing West German agriculture. In an area almost exactly equal to New York and Pennsylvania combined, there were two million farms. About 60 per cent of these were 5 hectares (12.5 acres) or less in size, while 80 per cent were less than 10 hectares (25 acres). The average farm was 9.8 hectares, with 6.8 hectares of agriculturally used land. A portion of the smaller farms were part-time enterprises, but a farmer with 5 hectares of land seldom had other employment. It is obvious that a majority of the holdings were too small to be economically sound, even with intensive use, and many were too small to give more than bare subsistence to a farm family. In all West Germany, there were only 10,000 holdings of more than 75 hectares (187 acres) each.[45] The average farm, therefore, was so small as to make it difficult to invest more agricultural capital to advantage or to mechanize operations except on a cooperative basis. The drive of agricultural experts to enlarge farms in the interest of efficiency made little headway and was opposed by agricultural leaders who did not want to see an increase in the drift to the city.

Not only were farm holdings small, but, except in the north and the extreme south, they were divided into small parcels. A quarter of a million farms had 20 or more fragments each, and the average farm had 10. Land consolidation was, therefore, a crying need. Experts found it difficult to see how such improvements as mechanization, drainage, and control of weeds, pests, and diseases, could be adopted under existing conditions. The *Laender* were concerned with land consolidation to the extent of making heavy investments, the federal government attempted to guide programs, and substantial sums of ECA-MSA aid were utilized. Nevertheless, progress was slow, partly because of the difficulty of speeding up legal processes and partly because land consolidation, at least by the method in common use, was very expensive. A 1950 estimate for Bavaria stated that at the rate of current progress it would take until the year 2063 to apply consolidation to all farms needing it.[46] The universal acceptance of this problem as a fundamental one, however, gave some assurance of an increase in tempo.

In spite of the handicaps sketched above, and of the deep-seated traditionalism of the West German farmer, there were indications of change in the air. The development of small tractors and machines, despite their high cost, was leading to considerable mechanization. By the end of 1953, more than a third of a million tractors were in use, approximately one for each six farms. The growing popularity of grain combines, grain drying equipment, machinery for hay and root crop harvests, and milking machines showed a trend toward the use of labor-saving devices where most needed.[47] Nationwide agriculture fairs had given the numerous farm equipment manufacturers opportunities to show and demonstrate their prod-

[43] Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "Annual Agricultural Report, 1953," p. 7.

[44] *Ibid.*, "1952 Annual Agricultural Report," 10–11.

[45] *Ibid.*, 12–18.

[46] Office of Land Commissioner for Bavaria, *Intelligence Review*, August 10, 1950, E 23–24.

[47] Food and Agriculture Division, Office of U. S. High Commissioner for Germany, "Farm Machinery," January 7, 1955.

ucts and to sell them on a nation-wide market.[48]

By 1953, West German agriculture was no longer handicapped by the shortages of the immediate postwar years. Farm labor was abundant, and the wage scales were comparatively low. Seed supplies were ample, and most of them, except for various kinds of hay seeds and hybrid corn, were home grown. Fertilizers were in good supply, and only phosphates were imported, while nitrogen and potash were exported. West German farmers were using more fertilizer than before the war. Insecticides, fungicides, and other requisites were plentiful. Building materials were available, although their use was still somewhat curtailed by high prices and the shortage of long-term credit. The availability of such credit, which is of course vital to any long-term improvement of agriculture, was improving, and both the government and banking interests were showing an interest in helping the situation.[49]

Especially noteworthy was the improvement in the agencies which disseminated technical information to West German farmers. It was too soon for results to show up from the research and experimentation which had been encouraged and in part financed by ECA-MSA counterpart funds, but the spread of existing knowledge had already led to better methods in many areas. Courses in agriculture and home economics in institutions of higher learning had been expanded, thus providing top leadership for agricultural programs. Counterpart funds had assisted in the rebuilding or enlargement of 169 secondary agricultural schools, and others had been improved without such aid. Since agricultural extension in West Germany was a function of the *Laender*, the response to the exigencies of the times and to the lever of counterpart aid had varied, but there had been an undoubted improvement and enlargement of such services. As the result of ECA-MSA aid, every county in West Germany had at least one agricultural agent entirely free of teaching and duties other than those of advising farmers. A small start toward federal coordination of the *Land* programs in the field of agricultural extension had been made, and there seemed a good chance that regional fears of centralized control would eventually be broken down. A hopeful sign was the undoubted success of the federal agricultural information service, which supplied local agricultural extension workers with bulletins, slides, films, and other media.

West German agriculture, which had on the whole made a successful comeback since the war, now faced a serious decision. Many farmers looked backward with nostalgia to a time when they were insulated and protected from outside competition. Others, looking forward, felt that changes were dictated by the trend toward internationalism, by the increasing hostility toward agricultural protection by other segments of the population, and by the needs of agriculture itself to make a healthy growth. The farmers' organizations, whose relative position had not changed greatly since 1949, reflected this dilemma. The *Bauernverband* leadership, in particular, was so divided that a policy of "inactivity" had been adopted.[50] There was, despite the "Luebke Plan," a similar split within the Federal Ministry of Food, Agriculture, and Forestry. Nevertheless, it seemed likely, barring war or other dislocation, that West German agriculture would become increasingly modernized and that it would gradually make the adjustments necessary to fit in with continental and world developments.

[48] See Food and Agriculture Division, Office of the U. S. High Commissioner for Germany, "1953 Annual Agricultural Fair," July 13, 1953, pp. 11–17.

[49] See Food and Agriculture Division, U. S. High Commissioner for Germany, "Annual Agricultural Report, 1953," pp. 19–20, 56–59.

[50] *Ibid.*, 63–70.

THE NEW DEAL AGRICULTURAL PROGRAM AND THE CONSTITUTION

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On March 16, 1933, twelve days after his first inauguration, President Franklin D. Roosevelt sent to Congress an Agricultural Adjustment Act which he characterized as "the most drastic and far-reaching piece of farm legislation ever proposed in time of peace."[1] Drafted by Frederick P. Lee, Washington legislative counsel for the Farm Bureau Federation, the measure was largely the product of the recommendations of a conference of farm leaders called in Washington on March 10.[2] The program called for a reestablishment of the ratio between the purchasing power of farmers and nonfarmers which prevailed from 1909 to 1914, and was based on the assumption that the farmer's economic problems were primarily the result of overproduction. Thus the measure called for farmers to reduce their acreage in seven basic commodities in return for federal benefit payments to be derived from taxes levied upon the processing of the commodities for consumption.[3] Such a drastic invasion of the farm economy by the federal government naturally produced vast problems, and none was more difficult than finding a sound constitutional base upon which to rest the program.

The text of the act suggested three constitutional justifications. The language of the preamble seemed to place possible reliance upon the theory of emergency powers. It also referred to the commerce aspects of the measure when it stated that the chronic agricultural situation, which had existed during the depression, had "burdened and obstructed the normal currents of commerce." The same feature was stressed in the act's marketing provisions where the Secretary of Agriculture was given the power to enter into marketing agreements with processors and others engaged in handling any agricultural commodity "in the current of interstate and foreign commerce." Also he was to have the power to issue licenses permitting processors and others to handle "in the currents of interstate or foreign commerce" any agricultural commodity or "any competing commodity." The object was to enable the Secretary to prevent or eliminate unfair prices and practices. But, in the final draft of the act, in light of the key processing tax provisions, it was the power of Congress to lay and collect taxes which provided the main constitutional support of the measure.[4]

This agricultural structure was augmented in 1934 and 1935 by three supplementary measures: the Bankhead Cotton Control Act, the Kerr-Smith Tobacco Control Act, and the Warren Potato Act. At the same time Congress passed a special Tobacco Inspection Act. These acts contained declarations indicating that they were based on the commerce power, but their substantive provisions were not expressly limited to transactions involving commerce.[5]

From the time the machinery was put into operation, the administration's agricultural leaders looked to the Supreme Court for some clue as to the justices' viewpoint. How closely they watched was brought home clearly in 1935 when the court, in the Schechter Poultry case, ruled the National Industrial Recovery Act unconstitutional because of the broad delegation of power to the N.I.R.A. administrator.[6] The Department of Agriculture reacted speedily with proposed amendments to the A.A.A. Congress passed these amendments, revising the statute to provide standards sufficient to meet the test of delegation of power, and to limit the control over

[1] Samuel Rosenman, ed., *Public Papers and Addresses of Franklin D. Roosevelt* (13 vols., New York, 1938), 2:79.

[2] Donald C. Blaisdell, *Government and Agriculture* (New York, 1940), 41–42.

[3] The original seven commodities: wheat, cotton, field corn, rice, tobacco, hogs, and milk were later augmented by beef, dairy cattle, peanuts, barley, flax, grain sorghums, sugar beets, sugar cane, and potatoes under the Jones-Connally Act of 1934. *U. S. Statutes at Large*, 48:528.

[4] *Ibid.*, 48:31.

[5] *Ibid.*, 48:598, 1275; 49:782, 731.

[6] *Schechter Poultry Co. v. U. S.*, *U. S. Reports*, 295:495.

agriculture to products which clearly entered interstate commerce.[7]

The Schechter decision also had an impact on the licensing provisions of the A.A.A. The lower courts had previously been harsh on these provisions,[8] and following the Schechter ruling, Congress, as a precautionary move, passed an amendment eliminating the word "license" and substituting the term "marketing order." This 1935 act also limited the applicability of the orders to designated agricultural commodities, which were "in the current of interstate or foreign commerce or . . . directly affected such commerce."[9]

Despite these various attempts to make the agriculture program conform to judicially prescribed legal standards, the taxing features of the statute were left unaltered. Large sums due in taxes became tied up in litigation, and with more than seventeen hundred separate suits in the lower federal courts challenging the whole program of crop reduction and price raising, a Supreme Court test was only a matter of time.[10] The results of this test were announced January 6, 1936, in the case of *U. S. v. Butler*.[11] The United States had presented a claim to the receivers of the bankrupt Hoosac Cotton Mills for processing and floor taxes on cotton. The receiver recommended that the claims be disallowed. The District Court upheld the taxes as valid, and ordered them paid, but the Circuit Court of Appeals reversed the order and the case was appealed to the Supreme Court. Justice Roberts delivered the majority opinion, upholding the Circuit Court, and striking down the A.A.A. as unconstitutional.

Roberts centered his attack on the processing tax provisions, maintaining that such taxes were not a legitimate exercise of the federal taxing power, since they were levied in order to finance a system of regulating agriculture over which Congress had no power. Here Roberts relied on the *Bailey v. Drexel Furniture* case which in 1922 had outlawed a tax on goods produced by child labor.[12] The Bailey decision had stated that if a tax involved destructive rates it was in essence a penalty. The processing taxes, however, were levied for different reasons. The prohibitive child labor tax was clearly to exclude goods made by child labor from the market, and the revenue brought in, if any, was not designated for specific allocation. The processing taxes, on the other hand, were not levied for penalty purposes, but their disbursement provided the coercive factor in the scheme for federal agricultural regulation.

Roberts further had to distinguish the 1923 case of *Massachusetts v. Mellon*, in which Justice Sutherland speaking for a unanimous court had declared that the purposes to which federal expenditures were to be put presented no justiciable issue.[13] This he did by maintaining that the revenue here involved was unalterably linked with the "unauthorized plan" of federal agricultural regulation, and could not be considered alone on its merits as a mere revenue raising measure.[14]

The A.A.A. had placed brief emphasis upon the commerce clause. Roberts, beginning with the assumption that the act involved was unconstitutional, was unwilling to look for any constitutional peg upon which to hang a presumption of constitutionality. He dismissed any possible commerce clause justification by stating that

> the Government does not attempt to uphold the validity of the act on the basis of the commerce clause, which, for the purpose of the present case, may be put aside as irrelevant.[15]

[7] For a discussion of the full text of these amendments see Edwin G. Nourse, *Marketing Agreements Under the A.A.A.* (Washington, 1935), 423–439.

[8] See *Hill v. Darger, Federal Supplements*, 8:189; affirmed, *2nd Federal District Court*, 76:198; *Wallace v. Smith, ibid.*, 11:782.

[9] *U. S. Statutes at Large*, 49:750. These changes concerned marketing, production quotas, and price fixing. They mostly affected very perishable commodities, such as fruits, vegetables, milk, and their products which were often shipped a considerable distance and had a highly localized and specialized production. The initiative in securing such agreements was left largely to producers' marketing organizations.

[10] Robert H. Jackson, *The Struggle for Judicial Supremacy* (New York, 1941), 140.

[11] *U. S. Reports*, 297:1.

[12] *Ibid.*, 259:20.

[13] *Ibid.*, 262:447. Samuel J. Konefsky points out that this limitation on judicial interference with the power of the purse suggested possibilities for overcoming constitutional obstacles in the way of direct federal action, and that the 1933 Agricultural Adjustment Administration was the first major experiment with these possibilities. *Chief Justice Stone and the Supreme Court* (New York, 1945), 100–101.

[14] *U. S. Reports*, 297:58–59.

[15] *Ibid.*, 297:64.

Thus, over a strong and bitter dissenting opinion by Justice Stone, concurred in by Justices Brandeis and Cardoza, the court dealt a severe blow to the New Deal program for controlling production programs depending upon benefit payments raised by taxes.[16] Further, although the decision had not specifically invalidated the marketing agreement provisions, it left serious doubts as to their validity.

One week after the Butler decision, a unanimous court held, in *Rickert Rice Mills v. Fontenot*, that the extensive amendments to the A.A.A., which had become law in 1935, did not "cure the infirmities of the original Act."[17] The court also ordered that the taxes which had been paid under the act and which had been impounded pending the decision of the court should be returned, without reference to any procedural machinery for recovery established in the act itself.

The New Deal administration was determined that processors should not profit by refunds of processing taxes. Accordingly, in the 1936 revenue act, they secured the inclusions of a provision imposing an eighty per cent "windfall" tax on all processing taxes recovered from the government.[18] In order to recover the taxes, the processor was required to prove that the taxes had not been passed on to his customers through an increase in price. In May of 1935, the Supreme Court approved this provision by an eight to one majority.[19] In the meanwhile, New Deal leaders had found ways to keep benefit checks going to farmers, largely through the diversion of unused funds from other departments.[20]

The necessity for a substitute to fill what one popular magazine of the day called the "seething vacuum of the A.A.A."[21] was immediately obvious. Unlike the N.I.R.A., which by the time of its invalidation had little support from either large or small industry or labor, the A.A.A. was continuously championed by well-organized and politically powerful farm groups, and early substitute legislation was demanded. Many farmers wanted to know what permanent steps were to be taken to replace their cancelled benefit payments for crop control.

New Deal agricultural leaders were not caught napping by the Butler decision. In fact, Basil Rauch has pointed out that the "decision might be said to have caused an expansion rather than an abandonment of the administration's agricultural program."[22] Three years of the A.A.A. had demonstrated many flaws in the measure. Rigidities in administration and overcentralization needed correcting. Thus, the Program Planning Division of the A.A.A. was ready with substitute legislation shortly after the Butler case. As the administrator's report for 1936 states

> the decision . . . had the effect of hastening a transition which had long been planned. This was the transition from the temporary emergency phase of the adjustment programs to a long-time phase which would give a larger place to soil conservation and improved farm-management practice.
>
> Such a transition was originally planned by the Agricultural Adjustment Administration in late 1934 and early 1935. It was the subject of discussions with representatives of farmers, agricultural colleges, and extension workers in a series of regional conferences in 1935.
>
> President Roosevelt in a statement on October 25, 1935, had announced the Administration's intention to shift the program to a long-time basis. Hence the Hoosac Mills decision . . . precipitated as a sudden change that which had been planned as a gradual one.[23]

The background for new legislation came from an earlier attempt of Congress to provide for conservation of the country's natural resources. In 1935 Congress had passed a Soil Conservation Act in an attempt to control the recurring floods and dust storms chronic in the mid-thirties. Believing that an indirect production control plan, if tied in

[16] Stone not only contended that the processing taxes were ordinary and legitimate excise taxes and constituted no coercive system or regulation, but chastised the court for its lack of self-restraint in invalidating actions of the executive and legislative branches. Konefsky, *Chief Justice Stone*, 87ff.

[17] *U. S. Reports*, 297:110, 118.

[18] *U. S. Statutes at Large*, 49:1747.

[19] *Anniston Manufacturing Co. v. Davis*, *U. S. Reports*, 301:337.

[20] At the same time, at the request of the President, Congress repealed the special compulsory control legislation dealing with cotton, tobacco, and potatoes which had been passed in 1934 and 1935. The Butler decision had made it sufficiently clear that those acts could not survive the Supreme Court.

[21] *Literary Digest*. 121:5 (January 18, 1936).

[22] Basil Rauch, *The History of the New Deal*, 1933–1938 (New York, 1944), 214.

[23] U. S. Agricultural Adjustment Administration, *Agricultural Conservation 1936. A Report of the Activities of the Agricultural Adjustment Administration* (Washington, 1937), 1.

with this soil conservation measure, would meet the test of constitutionality, Congress passed and the President signed on February 29, 1936, an amended Soil Conservation and Domestic Allotment Act. In attempting to avoid the Butler proscriptions, the measure made soil conservation its chief object, with indirect production control as a minor feature. Instead of bounties for curtailed production, benefit payments were to be made to farmers voluntarily cooperating with the government in the work of soil protection. The Secretary of Agriculture was authorized to make payments or grants of other aid to agricultural producers, measured in proportion to their adoption of soil conservation practices. It was expressly provided, however, that the Secretary should not have power to enter into any contract binding upon any producer.[24]

The constitutional interdictions which had been provided by the Butler case were avoided by not providing for any special processing taxes, and by financing the payments by a direct appropriation out of the Treasury. Because of the restrictive views of the court with respect to the commerce clause indicated in the Schechter case, no reliance was placed upon that constitutional basis.

Although the attempt to conform with the Butler case's constitutional concepts was fairly successful, the tailoring process, which this need dictated, left the program critically weak.[25] This weakness lay in the lack of assurance that enough producers would cooperate to permit a limitation of production sufficient to raise prices. During the good crop years of 1937 and 1938, commodity surpluses and sharply declining prices appeared again. Not enough farmers accepted the voluntary system.

In the meanwhile, the marketing agreement provisions of the 1933 A.A.A., as amended in 1935, had also come in for serious revision. They permitted the establishment of minimum prices for milk in interstate milk sheds, and a limitation upon the quantity marketed of fruits, vegetables, and some miscellaneous commodities. Although the Butler decision had not specifically invalidated these provisions, there was considerable question, especially on the part of the lower courts, whether the whole act had not by implication been voided.[26] Thus, in 1937, a move was made to obtain specific congressional reaffirmation of the marketing provisions, and on June 3 the Agricultural Marketing Agreement Act of 1937 was signed by the President.[27] The declared policy of the act was to establish and maintain such orderly marketing conditions for agricultural commodities in interstate commerce as would provide farmers with a purchasing power equivalent to that which they enjoyed during a designated base period in the past, and to protect the interest of the consumer in approaching and maintaining this level of prices. To effectuate this policy, the Secretary of Agriculture was authorized to determine whether such a purchasing power was being realized by the farmers. When he found that such purchasing power was not equivalent to the statutory standard, the regulatory provisions of the act were to become effective. The Secretary was also to have power, with the concurrence of certain percentages of the producers and handlers of milk and certain other products, to control prices and conditions of marketing.

Emphasis on a commerce base for the new Marketing Agreement Act seemed very promising in light of the Wagner Labor Board cases of 1937.[28] In these cases the Supreme Court had upheld the National Labor Relations Act which had been framed upon the assumption that production could be regulated as interstate commerce. In so doing, it reversed its previous narrow interpretation of the commerce power, and indicated its willingness to take an extremely broad viewpoint toward such legislation. With these precedents in mind, the framers of the 1937 act restated and broadened the definition of what would constitute interstate commerce in agricultural commodities. For the purpose of the new act, a marketing transaction "in respect

[24] *U. S. Statutes at Large*, 49:163, 1148.

[25] Philip M. Glick, "The Soil and the Law," *Journal of Farm Economics*, 20:430, 616, 628 (August, 1938).

[26] Compare *U. S. v. David Buttrick Co., Federal Supplements*, 15:655 and *Ganley v. Wallace, ibid.*, 17:115 with *Edwards v. U. S., ibid.*, 14:384 (temporary injunction) and *ibid.*, 16:53 (permanent injunction).

[27] *U. S. Statutes at Large*, 50:246.

[28] *N.L.R.B. v. Jones and Laughlin Steel Co., U. S. Reports*, 301:1; *N.L.R.B. v. Fruehauf Trailer Co., ibid.*, 301:49; *N.L.R.B. v. Friedman-Harry Marks Clothing Co., ibid.*, 301:58.

to an agricultural commodity or the product thereof" was to be considered in interstate and foreign commerce

> if such commodity or product is part of that current of interstate or foreign commerce usual in the handling of the commodity or product whereby they . . . are sent from one State to end their transit, after purchase, in another, including all cases where purchase or sale is either for shipment to another State or for the processing within the State and the shipment outside the State of the products so processed.[29]

The act provided for both quasi-legislative and quasi-judicial proceedings. Before the issuance of the regulatory order (or a marketing agreement which did not need a formal order), notice had to be given and a hearing held. Thereafter, a regulatory order might be issued which would have the force and effect of law. It was directed towards no particular individual, but towards all persons who might be affected. The quasi-judicial proceedings were to enforce the order upon an individual who might be affected by the order. It was directed at an individual rather than towards the formulation of a general regulation.

This marketing agreement machinery, along with that of the Soil Conservation Act, bridged the gap until a comprehensive farm measure could be procured. By 1938 external factors were making such a program a virtual necessity. Donald C. Blaisdell has pointed out

> Economic collapse and large, unsalable surpluses of farm crops had their effect in producing the 1933 Agricultural Adjustment Administration. Drought in 1934 and the adverse Supreme Court decisions in 1935 and 1936 were largely responsible for the Soil Conservation and Domestic Allotment Act. Similarly a combination of drought in 1936 and business recession and bumper crops in 1937 set the stage for the 1938 Agricultural Adjustment Administration.[30]

A second Agricultural Adjustment Act had been planned from the time of the passage of the 1936 Soil Conservation Act, and government agricultural leaders had begun action for such a comprehensive agricultural program late in 1936. Early in 1937, a national conference of farm leaders met in Washington, drew up proposals and, as in the case of the first A.A.A., turned to Frederick P. Lee, the special counsel of the Farm Bureau Federation, to draft new farm legislation. This proposed second A.A.A., which has been characterized as near the top in complexity "of all the so-called 'New Deal' legislation,"[31] was placed before Congress early in 1937 as the Pope-McGill Farm Act. In May of that year, extensive hearings were held before the Senate Committee on Agriculture and Forestry. The new measure, as considered by the committee, was entitled: "A bill to provide an adequate and balanced flow of the major agricultural commodities in interstate and foreign commerce."[32] The title indicated the use of a different constitutional basis for agricultural legislation.

Although the Schechter and Butler decisions indicated potential Supreme Court opposition, the Labor Board cases had greatly broadened the then current conception of how far production could be affected by the power to regulate commerce. Hence the supporters of the agricultural program looked to these cases as a precedent for the regulation of agricultural production.

Both the Senate and House Committee hearings on the proposed legislation were concerned primarily with the economic aspects of the measure. Frederick P. Lee was called before each group, however, to testify as to the constitutional validity of the act. Lee was introduced to the Senate Committee by its chairman, Senator Ellison D. Smith of South Carolina, who in presenting him said,

> We will hear Mr. Lee, who drafted the bill, and God have mercy on your souls.

Lee responded,

> Senator, I would have felt the same way about it, if it had not been for the decision of the Supreme Court in the Wagner National Labor Relations Act cases.[33]

Lee pointed out that the "major constitutional question" of the proposed legislation was whether Congress had the power to im-

[29] *U. S. Statutes at Large*, 50:248.

[30] Blaisdell, *Government and Agriculture*, 40.

[31] Andrew F. Oehmann, "The Agricultural Adjustment Act of 1938," *Georgetown Law Review*, 26:680 (March, 1938).

[32] U. S. Congress, *Agricultural Adjustment Act of 1937. Hearings before the Committee on Agriculture and Forestry, United States Senate* (75 Cong., 1 sess., Washington, 1937). Similar language was incorporated in the stated purpose of the measure as passed. *U. S. Statutes at Large*, 52:31.

[33] U. S. Congress, *Agricultural Adjustment Act of 1937*, p. 33.

pose a penalty on a farmer who marketed farm produce in excess of his quota. That quota was to be determined by the Secretary of Agriculture who had the power, if he found a certain crop excessive, to limit the amount marketed during the ensuing year. This he could do by allotting quotas to the producing states and farmers within those states, and imposing prohibitive penalties on any goods sold in excess of the quota. It was widely felt that imposing high penalties on such marketed quotas would in effect constitute not merely regulation of interstate commerce but actual curtailment of production. However, in response to a challenge of this concept, Lee answered:

> The power of Congress . . . is not limited to those situations where the quantity going into commerce will be reduced, or where there will be an obstruction to commerce. For instance, as Chief Justice Hughes was careful to point out in considering the Wagner Act in the *Jones & Laughlin Steel Co. case*, the power of Congress extends not only to prevent burdens on commerce, but also to foster, protect, and restrain commerce. The question is not whether the uncontrolled marketing of the supply would burden or obstruct, but whether it affects interstate commerce. That is the principle the Court recognized in the Wagner National Labor Relations Act cases. It did not decide whether the particular exercise of power obstructed or prevented the flow; it decided whether or not interstate commerce was affected.[34]

Senator Louis Schwellenbach of Washington could see how a labor dispute could affect interstate commerce, but did not see how this instance was comparable since the amount of goods shipped was not diminished. Lee explained that the power of Congress as regards interstate commerce was not limited to preventing diminution of the quantity of goods that entered into interstate commerce. Here he cited *Chicago Board of Trade v. Olsen* as a precedent, a case decided fourteen years prior to the Labor Board cases, in which the court had indicated that local activities would be regulated as interstate commerce if they affected interstate transactions.[35] Concerning regulation of farm employees, Lee referred specifically to the Labor Board case in which the activities of employees in a local clothing factor had been held to affect interstate commerce.[36] Lee then contended that

> one might well say that the activities of farm employees with respect to production and marketing of crops affect interstate commerce. I know of no reason for distinguishing between industrial and agricultural labor.[37]

Lee concluded by pointing out the shift of ground used to bring the new law under the commerce clause, indicating that it would then conform to the court's position in the Labor Board cases, which he felt to be valid and applicable.[38] In his testimony before the House Committee on Agriculture, he used virtually the same arguments.[39]

The new A.A.A. did not become law during the regular sessions of the Seventy-fifth Congress. It was given high priority at a special session called in December 1937. During debate, the constitutionality of the compulsory marketing quotas was questioned as an improper use of the commerce power. The Republican minority of the House Committee even claimed that the plan was designed to embarrass the Supreme Court and start a new campaign against the judiciary.[40] Such opposition was overcome, however, and on February 16, 1938, in the next regular session of Congress, the final bill was signed by the President.[41]

The Agricultural Adjustment Act of 1938 in its final form included five major sections dealing with a variety of farm problems. Title III was the most important section, and embodied most of the provisions which raised constitutional issues.[42] It dealt with loans, parity payments, consumer safeguards, and marketing quotas, and its basic operation involved a number of steps. If, in any year, production of one of the basic commodities (wheat, corn, cotton, rice, or tobacco) threat-

[34] *Ibid.*, 34–35.
[35] *U. S. Reports*, 262:1.
[36] *N.L.R.B. v. Friedman-Harry Marks Clothing Co., ibid.*, 301:58.
[37] U. S. Congress, *Agricultural Adjustment Act of 1937*, p. 36.
[38] *Ibid.*, 40.
[39] U. S. Congress, *General Farm Legislation. Hearing before the Committee on Agriculture, House of Representatives* (75 Cong., 1 sess., serial C, Washington, 1937), 30–35.
[40] "Farm Bill Faces Veto or Court," *Business Week*, 15–16 (December 4, 1937).
[41] *U. S. Statutes at Large*, 52:31.
[42] Title I consisted of amendments to the Soil Conservation and Domestic Allotment Act of 1936. Title II authorized the Secretary of Agriculture to intervene on behalf of agriculture in cases before the Interstate Commerce Commission with respect to freight rates on agricultural commodities. Title IV related to Cotton Pool Participation Trust Certificates, and Title V was the new Crop Insurance Act.

ened to create a surplus, the new Agricultural Adjustment Administration was to take a referendum among the producers of a given crop on the desirability of imposing limitations for the next crop year.[43] If two thirds of the producers involved voted favorably, the A.A.A. could then establish quotas on that crop. These quotas would be first apportioned among the states according to the amount of the product raised during a specific preceding period. The state quota was then to be allocated among the farmers. These farm quotas were to be worked out by local committees of farmers according to standards prescribed by the act. If a farmer's acreage allotment was not sufficient and he suffered a reduction in income, he might be compensated by a government subsidy. On the other hand, he might raise more acres of the crop, but, if he marketed products from excess acreage during a period of surplus, he would be subject to fine. On surplus crops so produced he might, however, receive loans from the Commodity Credit Corporation in the Department of Agriculture in amounts calculated according to parity prices.[44] Such surplus crops were to be stored under government seal until a time of scarcity, when the farmer might sell them at the parity price and repay his loans.

Three processes involved in the act need careful differentiation as to their constitutional base. The first two, the making of cash payments to farmers in return for conservation practices under the soil conservation provisions, and the extension of loans on agricultural commodities, found their constitutional justification in the power of Congress to tax. The third, the assignment of marketing quotas, was based upon the power to regulate commerce. The latter was most important. The system of payments only incidentally constituted the force behind the act. Compliance was sought not so much by inducements as by the penalties levied if a surplus threatened interstate and foreign commerce. The charge that this penalty in effect curtailed production was true. However, the effect was to regulate commerce, and the Labor Board decisions indicated that the court would focus its attention on the regulation of commerce rather than the curtailment of production.[45]

The position of the Supreme Court concerning the new act differed considerably from its position toward the 1933 legislation. The 1938 measure purportedly aimed at keeping surpluses out of the interstate and foreign markets, a fact which made the court's job one of merely testing the statute in terms of interstate and foreign commerce. The question in each case became the validity of the penalty imposed on the marketing of crops produced above a set quota. If a farmer did not like his specific crop allotment, he could appeal to the courts. If, on the other hand, a farmer marketed more than his allotment, the warehouseman had to pay to the Secretary of Agriculture a penalty equal to one half the market price of the excess and could then deduct this amount from the prices paid the producer. The farmer's only recourse in this instance was to seek an injunction to restrain the warehouseman from deducting penalties from the sale price of the goods. In both instances, the validity of the commerce base was in dispute.

Cases involving the constitutionality of the conglomerate agricultural program began to reach the Supreme Court in the 1938–1939 term. The first, *Currin v. Wallace,* involved the Tobacco Inspection Act of 1935.[46] Chief Justice Hughes speaking for the court declared that under its power to regulate interstate commerce, Congress could validly prescribe the conditions under which interstate sales of agricultural goods could be made. Cases which followed involving the Agricultural Marketing Agreement Act and Marketing Act provisions further dealt with the

[43] L. V. Howard, "The Agricultural Referendum," *Public Administration Review,* 2:9 (Winter, 1942).

[44] Parity prices as defined in the new act were the same as those specified in the Marketing Agreement Act of 1937, but differed slightly from the definition used between 1933 and 1937. The prices were based as before on the average price of the given commodity during the years 1909–1914. For a detailed discussion of the differences in the various measures as to parity see Murray R. Benedict, *Farm Policy of the United States, 1790–1950* (New York, 1953), chaps. 14 and 15.

[45] In an attempt to insure against a simple adverse decision imperiling the whole program, the usual separability clause declared that if any provision of the new act was not within the commerce power "such provision shall not be held invalid if it is within the power of Congress to provide for the general welfare or any other power of the Congress." *U. S. Statutes at Large,* 52:69.

[46] *U. S. Reports,* 306:1.

commerce power. The first two, *U. S. v. Rock Royal Cooperative* and *H. P. Hood and Sons v. U. S.*, concerned the marketing order provisions of the first A.A.A. which had not been clearly invalidated by the Butler decision and had later been incorporated into the Agricultural Marketing Act of 1937.[47] These provisions permitted the establishment of minimum prices for milk in interstate milk areas and limitations upon the quantity marketed of certain other commodities.[48] In both cases the United States brought action to compel compliance with the orders of the Secretary of Agriculture concerning marketing of milk, and in both, the validity of the Agricultural Marketing Act of 1937 was challenged.

The ruling of the court in each case made clear that the commerce clause was to provide the basis for agricultural regulation. Justice Reed in the Rock Royal case reaffirmed the *Currin v. Wallace* ruling, pointing out that "where commodities are brought for use beyond state lines, the sale is a part of interstate commerce" and hence subject to federal control.[49] Since the sales being regulated were interstate sales, Congress had as much power to regulate the price in such interstate transactions as the states had to regulate their internal commerce. Reed further declared that intrastate, as well as interstate, commerce in milk could be regulated since the two, in the case considered, admittedly commingled in moving to market.

In the light of the seeming definitiveness of these decisions, it seemed unusual for the court to have been called upon again in 1942 to render a further decision on the validity of the Agricultural Marketing Act. However, since there was a slight difference in the factual situation, the court accepted the case of *U. S. v. Wrightwood Dairy* and through it extended national power in the domain of commerce.[50] The dispute involved a milk order by the Secretary of Agriculture in the Chicago milk area. Here, however, the milk was produced in the state and was not physically intermingled with milk that crossed the state line, but was sold in competition with milk of others engaged in interstate commerce. Despite the respondent's claim that the federal government had no power of regulation in such an intrastate situation, the court again upheld the measure. The power of Congress over interstate commerce, Chief Justice Stone wrote, was plenary and complete in itself and the reach of that power "extends to those intrastate activities which in a substantial way interfere with or obstruct the exercise of the granted power."[51] He further declared that: "It is the effect upon interstate commerce or upon the exercise of the power to regulate it, not the source of the injury which is the criterion of Congressional power."[52] This, he insisted, Congress had recognized when it passed the Marketing Act.

With the Wrightwood case, the validity of the Agricultural Marketing Act was thoroughly established and later cases dealt only with certain procedural aspects of the act.[53] The largest number of cases involving the act and orders issued under it have been instituted by the government under section 8a (6) which vested U. S. District Courts with jurisdiction to enforce, and to prevent and restrain any person from violating any order, regulation, or agreement made or issued under the act. In cases of this character, the government had usually sought mandatory and prohibitory injunctions. As two students of the measure have pointed out:

> Conduct of all this litigation has been attended with a notable degree of success, due largely to the effective presentation to the courts of the philosophy imbedded in the statute and to the recognition by the courts of the validity of this philosophy as a legitimate basis for regulation in the economic realm.[54]

The constitutionality of the Agricultural Adjustment Act of 1938 had frequently been challenged in Congress and was tested in court as soon as it was put into operation. The initial case, *Mulford v. Smith*, brought by tobacco growers seeking to market tobacco in excess of their quotas, challenged the valid-

[47] *Ibid.*, 307:533, 588.

[48] "Agricultural Marketing Agreement Act — Milk Regulation," *New York University Law Quarterly Review*, 17:86 (November, 1939).

[49] *U. S. Reports*, 307:568–569. A similar holding was reached in the Hood case.

[50] *Ibid.*, 315:110.

[51] *Ibid.*, 315:119.

[52] *Ibid.*, 315:121.

[53] *Stark v. Wickard, ibid.*, 321:288; *U. S. v. Ruzicka, ibid.*, 329:287.

[54] Ashley Sellers and Jesse E. Baskette, Jr., "Agricultural Marketing Agreement and Order Programs, 1933–1943," *Georgetown Law Journal*, 33:123, 146 (January, 1945).

ity of the Secretary of Agriculture's promulgation and enforcement of tobacco quotas.[55] Justice Roberts, who had written the Butler decision outlawing the first A.A.A., reflected the court's altered viewpoint in his majority opinion upholding the measure. Roberts stated that the act did not purport to control production. It set no limit upon the acreage which might be planted, and imposed no penalty for the planting and producing of tobacco in excess of the marketing quota. It purported to be solely a regulation of interstate commerce, which it reached and affected at the place where tobacco entered the stream of commerce — the marketing warehouse. Such restriction, Roberts pointed out, was valid since

> Any rule . . . intended to foster, protect and conserve that commerce, or to prevent the flow of commerce from working harm to the people of the nation, is within the competence of Congress.[56]

The case was highly significant in the evolution of governmental power under the commerce clause. It established the power of the federal government to regulate the quantity of a commodity which could be sold, a type of regulation which in practical effect would control the amount produced in an interstate industry. Also, since the legislative motive was held irrelevant, the fact that an act was designed to control production need not make it suspect, even though the production was only indirectly affecting interstate commerce. Thus, Roberts, in effect, sanctioned under the commerce power the type of agricultural regulation unsuccessfully attempted under the taxing power.

The removal of the categorical distinction between commerce and production came in 1942 in *Wickard v. Filburn*.[57] The case involved the validity of the wheat-marketing quota provisions of the 1938 A.A.A. Congress had amended these provisions in May 1941 to authorize the Secretary of Agriculture to fix marketing quotas for all wheat except that insulated by storage. Filburn was the owner and operator of a small farm. Part of his wheat crop he sold; a part he fed to his dairy herd; some he used to make flour; and some was for the following season's seeding. He planted and harvested wheat in excess of the acreage allotment which he received and was thus subject to a penalty under the measure. Rather than storing the additional wheat which he had grown, or giving it up to the Secretary of Agriculture, either of which would have eliminated penalty, he sought an injunction against the enforcement of the act and asked for a declaratory judgment that the wheat marketing quota provisions of the act, as amended, were unconstitutional because not sustainable under the commerce clause.

Justice Jackson rendered the decision which has been characterized as "the most important opinion under the commerce clause since *Gibbons v. Ogden*."[58] The argument had been made that since Filburn's wheat was not to be sold in interstate commerce, it could not be reached by the statute because this would involve federal control of the production and consumption of wheat. This Jackson rejected. He pointed out that the purpose and effect of the act was to regulate marketing which constituted interstate commerce. He had no doubt that Congress might include in its scheme Filburn's wheat and other wheat similarly situated, since this was necessary to the effective operation of the marketing program. As to the consumption of the wheat on the farm itself, Jackson maintained that even if such wheat "is never marketed, it supplies a need of the man who grew it which would otherwise be reflected by purchase in the open market."[59]

The underlying purpose of the act, on the basis of the congressional record, Jackson stated, was to stimulate trade at increased prices. Under such circumstances, he maintained that wheat consumed on the farm where grown, even if wholly outside the scheme of regulation, would have a substantial effect in defeating and obstructing the purpose of the act. Hence Jackson totally rejected the commerce production distinction, so much a part of the earlier interpretation of the commerce clause.

> Whether the subject of the regulation in question was production, consumption, or marketing, is, therefore, not material for purposes of deciding the question of federal power before us.[60]

[55] *U. S. Reports*, 307:38.
[56] *Ibid.*, 307:48.
[57] *Ibid.*, 317:111.
[58] Kenneth C. Sears, "The Supreme Court and the New Deal," *University of Chicago Law Review*, 12:140 (February, 1945).
[59] *U. S. Reports*, 317:111.
[60] *Ibid.*, 317:124.

The test of the power to regulate any local activity was hereafter to be a practical economic one. It involved the extent of economic effect the activity in question had upon interstate commerce.

Thus, by the early nineteen-forties, the restrictive legal formulas which had nullified earlier attempts at federal agricultural regulation had been discarded and the federal government's power under the constitution to regulate agricultural production seemed assured.

DAIRYING AND URBAN DEVELOPMENT IN NEW YORK STATE, 1850–1900*

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The five decades between 1850 and 1900 were transitional ones in the history of New York agriculture. Farmers of the Empire State, like their fellows in other eastern states, were faced with the problems of ever-increasing western competition and worn-out soils. Unlike many of the others, the New Yorkers were able to meet this challenge successfully, essentially through the adoption of a few agricultural specialties. One of these, dairying, though established as an important part of the state's agricultural economy by 1850, underwent fundamental changes during the next fifty years. One of the most vital influences producing this change was the growth in the size and number of small villages and cities and the development of large urban concentrations like New York, Buffalo, Syracuse, and Rochester. As commercial centers, these cities had taken great strides forward by 1850; as industrial centers, they were to expand still further in the next fifty years. The attempt to meet the resultant urban demand for dairy products had a decided effect upon the nature of the milk industry of the state.

Just a little more than a century ago, the population of New York numbered 3,097,294. About 800,000 of these inhabitants lived in fourteen cities located along the Hudson River-Erie Canal right angle. In the entire state there were only seven cities with a population greater than 25,000 and only seven more which numbered between 10,000 and 25,000.[1] By 1900 the number of urban centers of 10,000 or more inhabitants had grown to forty and the total population living in these cities had risen to over four and a half million.[2]

The increasingly urban character of the state was paralleled by growth in the dairy industry. From about two billion pounds in 1850, milk production rose to more than five and a half billion pounds by 1900. There was a steady increase in the volume of fluid milk, butter, and cheese sold in the open market. The sizable increase in milk production, however, was but one of the many fundamental changes taking place in the dairy industry of the state during these five significant decades. Directly and indirectly, the urban nature of New York was weaving a new pattern of social, economic, and political arrangements in the dairy industry.

Dairy production in 1850 was primarily concerned with butter and cheese—products which did not require immediate marketing. These products were sold in essentially the same fashion: that is, the butter and cheese were held throughout the year and then sent to the market. The cheese was sold to factors who came around to the farms in the spring to arrange to take the year's make and again in the fall to collect it.[3] The butter was sold either to speculators traveling the dairy counties, or sent to the ever-increasing

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[1] U. S. Census Office, *The Seventh Census of the United States*, 1850, pp. 9–11.

[2] U. S. Census Office, 12th Census, 1900, Vol. 1, *Population*, Pt. 1, lx–lxi.

[3] Eric Brunger, Changes in the New York Dairying Industry, 1850–1900 (unpublished doctoral dissertation, Syracuse University, 1954), 43–44.

commission merchants, or sent to market by a trusted individual from the area.[4]

Poor transportation considerably reduced the volume of fluid milk that could be sold. Only those dairymen living close to the city, or on a direct rail route to some large city were able to engage in the production of milk for market. Most New York producers, therefore, had to convert their milk into less perishable goods like cheese and butter, and the older dairy counties had by this date developed specialties—Orange County butter and Herkimer County cheese were the most notable.

The greatest urban concentration in the state was, of course, New York City, and its effect on the dairy industry was felt early in these rural counties nearby. This effect was not, at first, simply a demand for more milk; rather it was a demand for pure country milk as contrasted with the poor milk produced within the city limits. Previous to 1850 the bulk of the milk consumed by the city population was produced in distillery stable dairies. These were adjuncts of the distillery business and consisted of a group of low, over-crowded, poorly-ventilated stables close to the distilleries, in which large numbers of cows were fed the liquid grain mash residue from the stills. The conditions under which this milk was supplied ranged from simply unclean to vile and the milk itself had been demonstrated to be much poorer than country milk; in many cases it was actually detrimental to health. In addition, New York's milkmen availed themselves of the plentiful supply of water to make their milk go further, especially among the poor. Beginning in 1839, with the work of Robert Milham Hartley, philanthropic individuals, strongly supported by the medical profession and civic-minded citizens, attempted to improve these conditions and alert the citizenry to the dangers of "swill" milk.[5] It was as a direct result of their activity that organized attempts were made to bring country milk to the city. As a consequence, the first organization especially formed to this end, the Orange County Milk Association, was founded in 1844. After a few years of difficulty, caused by inexperience in the proper handling of fresh milk on the part of the producer and the railroad, the company began to prosper. Soon many Orange County farmers began shipping milk over the Erie Railroad to dealers in the city. By 1851 the trade had grown to nearly 794,000 forty-quart cans.[6]

This concern with the urban market led directly to a fundamental change in the nature of the end product of the Orange County dairy industry. Once famous for its farm-made "Goshen" butter, it now began to concentrate upon supplying the fluid milk demands of the metropolitan area. The forty-quart milk can replaced the churn and butter worker on the farms of Orange County. Butter factories, which began with Alanson Slaughter's venture at Walkill, did not develop in New York as they did in the mid-western states. The butter factories themselves were, in part, a consequence of the fluid milk trade. X. A. Willard, a Little Falls dairy farm owner and a prominent dairy journalist, who visited them in 1865, reported:

> These butter factories have, in a measure, been forced upon the farmer in self-protection. Where milk was regularly delivered at the depots for the New York market, the prices were of course somewhat under the control of the city operators, and the farmer submitted somewhat to abuses because he knew no way to relieve himself from the combinations formed against him.[7]

According to Willard, if the dealer would not accept the price the producer asked, the milk could be sold to the butter factories. Such a device was not long operative, however, as more and more dairymen turned to the fluid milk trade, preferring to ship directly to the city where they got a better price for the milk

[4] Hiram Olmstead, "Practical Farming, as Connected with the Manufacture of Butter," New York Agricultural Society, *Transactions*, 1859, p. 106. Also X. A. Willard, "Among the Butter-Makers of Orange County with Suggestions on Cheese Dairying," *ibid.*, 1865, p. 245.

[5] See especially the works by Robert Milham Hartley, *The Cow and the Dairy. Showing the Best Mode of Constructing Stables, Managing Dairies, and Detecting the Frauds of Dairymen* (New York, 1850); and John Mullaly, *The Milk Trade in New York and Vicinity Giving an Account of the Sale of Pure and Adulterated Milk—The Daily and Yearly Consumption—The Amount of the Property Invested in the Business—The Milk Dealers and Dairymen of Orange County and Other Counties—Injurious Effects of Impure Milk on Children—Advice to Country Dairymen* (New York, 1853).

[6] *Ibid.*, 25–36. This is an estimate based upon Mullaly's figures. It is not complete.

[7] Willard, "Among the Butter-Makers," 246.

than a butter factory could pay. Once enough dairy farmers were so engaged, the butter factory was forced to close down. Again, once the members of the dairy household had experienced the freedom from the churn provided by the forty-quart can, they were reluctant to return to the task of buttermaking.[8]

From 1845 to 1865 country milk enjoyed an enviable position in the trade in New York state. In competition with the "swill" milk of the distillery stables, the demand for country milk was great, and generally the producer enjoyed good prices. "Orange County milk" had an established trade mark value similar to that of "Goshen" butter or Herkimer County cheese. Beginning about 1868, however, prices began to fall with two significant drops between that date and 1878. From a yearly aggregate price of 58 cents a quart in 1868, the price fell off to 30¾ cents by 1878.[9] Possible explanations of this decline include the general drop in the level of prices after the Civil War and the steady increase in the number of producers shipping to the New York market, both from New York and other states. The Orange County men, however, were prone to blame the falling prices upon the organization in 1871 of the New York dealers into a Milk Exchange. This was primarily a trading organization whose charter function was "the buying and selling of milk at wholesale and retail, the purchase of dairies when deemed advisable and the sale of same to milk dealers."[10] The Exchange was engaged primarily in contracting dairies for the New York milk dealers. For this service the farmer paid a three per cent commission. Actually, because most of the large New York dealers were members, this organization in effect set the price for milk. Because the producers felt that such control over the price was unfair, they began to surrender some of their cherished individualism in the hope that by meeting combination by combination, city tactics with city tactics, they might gain control over the milk trade.

After two or three false starts, the first significant producer cooperative was started in 1882 by Orange County men. This organization was called the Erie Milk Producers Association after the railroad transporting their milk and offering assistance in their cause. This was one of three major attempts by producers for the New York market to gain control of the milk trade in the last two decades of the nineteenth century. In 1890 the Union of Milk Producers and in 1895 the Five States Milk Company tried to achieve a better position in the trade through organization. The first of these, the Erie Milk Producers Association, conducted the original strike in the milk shed in 1883. As a result of this conflict, the dairymen came to understand the relationship between the creameries which had developed in their county and the New York city dealers.

During the period under examination, the creameries were milk collection depots, located at various points along a railroad tapping the milk shed. The first of these was opened at Crystal Run station by a group of Orange County farmers in 1865, and, though many of the later creameries were cooperatives, the majority were owned or operated by city dealers. When first built, the creameries, considered an asset by the farmers, paid a fair price for the milk, usually by contract for the season. Probably as important, however, was the relief given the dairymen from concern about their milk reaching the city in good condition. Once it was delivered to the creameryman, it became his responsibility. Furthermore, the producer's investment in milk cans and his financial loss through damaged and lost cans was not as great as if he were supplying a city dealer directly.

When the price, as set by the New York Milk Exchange, began to fall steadily, the producer realized that he was in a trap. Control over the milk market was in the hands

[8] The peak year for Orange County butter production was 1850 when 3,769,000 pounds were manufactured. By 1900 this county's production had fallen to 327,000 pounds, *Seventh Census of the United States*, 1850, p. 124; U. S. Census Office, 12th Census, 1900, Vol. 5, *Agriculture*, Pt. I, *Farms, Live Stock, and Animal Products*, 389.

[9] *New York Tribune*, January 20, 1890. The term yearly aggregate price was used by the producers and newspapers of the time. It was arrived at by adding the average price per quart received each month for the twelve months of the year. This raw total was called the yearly aggregate price, *i.e.*, the total was *not* then divided by twelve to get the average price per quart for the entire year.

[10] *Report Made to Hon. Edward R. O'Malley, Attorney-General of the State of New York, by Special Deputy Attorney-General John Burlinson Coleman in the Matter of the Investigation into the Milk Traffic. New York County Supreme Court. April 7, 1910* (Senate Document No. 45, 133 Session, 1910), 83.

of the Exchange and the creameries, and it was this control that the producers tried to destroy by their milk strike of 1883. When this happened, the dealers were temporarily caught off guard and had to meet the producers' demands. They began immediately to take steps to prevent a recurrence of this situation by establishing other sources for their milk. In New York state these were generally in the counties west of Orange such as Delaware, Chenango, and Broome. This, in turn, rendered the Erie Milk Producers Association comparatively ineffective, since the new dairymen coming into the field welcomed the creamerymen as the Orange County men had done earlier. In order to control the milk trade, the farmers had to remain united and to do this they had to get the new men into their ranks to prevent the destruction of their organization. This they could not do and thus soon fell to quarreling among themselves, distrusting each other, and criticizing their leaders. Their later attempts at organization were unsuccessful and the conflict between the city interests and the rural producers grew ever greater and their relations down to recent times were characterized by mistrust and bitterness.[11]

Cities brought more than just a wider market to the dairymen of New York state. They also brought marketing facilities and a more formalized system of trade. The impact of this phase of urbanization is shown very clearly in the cheese industry. Though the cheese factory method of production was itself a rural discovery, the great spread of that system throughout the New York cheese-producing counties was a consequence of the great demand for cheese brought about by expanded markets. These expanded markets, in turn, were the result of the urban agencies of the cheese trade.

In 1864, at a meeting in Utica, there was formed the New York State Cheesemakers Association, whose purpose was the exchange of information and experience to promote the general interest of the dairying community. Most of the founding members of this organization combined the functions of milk producer and cheesemaker. In a few years, however, the leaders of the organization were no longer milk producer-cheesemakers but representatives of the commercial interests, and the primary topic for discussion at the annual meetings was the nature of the trade.

The organization, which changed its name in 1866 to the American Dairymen's Association, undertook the task of analyzing the English market. It sent a representative to England to examine both American and English cheese as it came into the marketplace, to discover the demands of the English as to quality, flavor, and color of cheese, and to gather information on the English dairying industry in general. His report, made at the annual meeting for 1866, had significant implications for the cheese dairyman as it pointed up the peculiarity of market demands. The English wanted a firm cheese, dry, solid, and of "good grass butter color," whereas the Americans preferred a cheese of looser make, whiter in color.[12] If the bulk of the cheese make was aimed at pleasing the export trade to England, it would not satisfy the taste of the domestic market. Further, this export demand would govern the price, and with producers concentrating upon supplying this market the price would tend to fall. Eventually, this was recognized by the cheese interests, but in the late sixties the English market looked like the great bonanza everyone was hoping to find.

And, for several years, these hopes were fulfilled. The export of cheese had been rising steadily since the fifties but had only exceeded fifty million pounds in one year, 1865. Beginning in 1869, however, exports grew rapidly and reached 148 million pounds in 1881, the peak year.[13] The importance of the English market in these statistics is clearly revealed by the fact that England and Canada took between 92 and 96 per cent of the American cheese exports. Such an increase in American production was made possible through the spread of the factory system with its advantages of improved quality and uniform characteristics of American cheddar cheese.

The domestic urban market for cheese eventually received its share of attention. Beginning about 1875 doubt was expressed about

[11] Brunger, Changes in the New York Dairy Industry, 186–240.

[12] *Rural New Yorker*, 17:30 (January, 1866); New York State Agricultural Society, *Transactions*, 1866, pp. 439–450.

[13] Brunger, Changes in the New York Dairy Industry, Table V: United States Butter and Cheese Exports, 1851–1900, p. 88.

the wisdom of concentrating upon the English market and many suggestions were made on the manner of increasing domestic consumption. Criticism was made of the poor quality of cheese found in the cheese-producing counties and of the waste incurred in cutting cheese in the retail trade. Americans, it was observed, were notoriously poor consumers of cheese compared to Europeans. The oblong cheese form was developed in Otsego County by A. Holderidge to eliminate the complaints about loss through wasteful cutting. Most indicative of this interest, however, was the steady increase of cheese production in face of falling exports after 1881. Though it is probably impossible to measure, the large stream of immigrants from cheese-eating countries of Europe undoubtedly contributed to the increased demand.

The consequences of this growth produced fundamental changes in the socio-economic patterns of the cheese dairying counties. The cheese dairy household now surrendered the difficult task of cheesemaking to the factory. The women of the household, to whom much of the work of manufacture and care of the cheese had been entrusted, were freed from this laborious task. The milk was now taken to the cheese factory, there to be handled by a skilled cheesemaker who could produce a cheese that would be much more uniform in size, quality, flavor, and other characteristics. As previously mentioned, this uniformity was a vital factor in controlling the market.

At the same time this brought about a specialization of labor within the cheese industry. No longer did each farm family combine the functions of milk producer, cheesemaker, and cheese dealer. Now, these tasks were separated and, though for many years some producers continued to be cheesemakers, the majority of them became milk producers only.

Gradually the early form of organization, the cooperative factory, was replaced by the privately-owned factory. This tended over the years to array the producers on one side and the cheese manufacturers and dealers on the other. Complaints of poor or watered milk were made against the producer, who was also accused of being careless in his dairy management. The farmers became suspicious of the cheesemakers, whom they accused of cheating, arbitrariness, and getting rich at the expense of the man who produced the milk. In talking with milk producers who were selling to cheese factories in 1900, the writer often met the observation "You have seen plenty of poor farmers, but who ever saw a poor cheesemaker."

Moreover, when the cheese industry expanded and its phases became more specialized, the milk producer felt himself more or less helpless in the arms of trade forces and blamed the businessman, the cheese commission merchant, and, when cooperative factories were replaced with private concerns, the cheesemaker. In the cheese industry, as in the fluid milk industry, the New York milkmen preferred to personalize their difficulties and blame the urban merchant and agencies of trade rather than such impersonal forces as increased milk supply and greater competition from other cheese-producing areas.

Finally, the dairy industry felt the political influence of urban elements through legislation aimed at the dairy business. This type of activity commenced early in the middle of the century with a drive on the part of New York City interests to obtain a law prohibiting the sale of impure, adulterated, and distillery stable milk. Not until 1864, however, was such a law finally passed. Even so, much adulterated or poor milk continued to be marketed because of the absence of a fixed state milk standard or an effective enforcement agency. This led to combined pressure by dairy interests and urban groups for a law which would provide both.

In 1884 the dairymen of Orange County combined with the butter dealers of New York and the butter dairymen of upstate counties to achieve the establishment of the Office of Dairy Commissioner. The Orange County men were concerned over the fact that creamerymen were skimming the milk and shipping both the cream and the skimmed milk, which they labeled whole milk, to the city market. This the Orange County men felt was cutting down the legitimate market for whole milk and enabling the creamerymen to take a double profit. The buttermen were concerned with a new product, oleomargarine, which threatened their security. A bill outlawing the coloring of oleo had been passed in 1875. Now as a result of great political pressure they were able to get through a bill setting up the much-needed enforcement agency, the Office of Dairy Commissioner. In this case both rural milk producers and urban dairy interests combined to

achieve a common goal. Even here, however, it must be pointed out that the leadership in this fight was provided by the urban elements, particularly the butter dealers.

The half century of change greatly affected the life and prospects of the New York dairyman. The basic nature of his milk product had shifted during these five decades from the production of butter and cheese to the production of fluid milk for the urban population. This, in turn, had changed the economic pattern of the dairy industry in several ways. It had replaced the farm system of cheese production with the factory system and the farm system of butter production in the same manner though to a lesser extent. Creameries had replaced butter and cheese factories in many counties, especially those in the south-central and southeastern sections of the state. The great concern with fluid milk production led to improved milk cattle. Greater attention was paid to purebreds and grade cattle, to single purpose rather than dual purpose breeds, to better care and feeding practices, and to improved handling of the milk both at the farm and in transit to urban markets. Finally, in the interest of purity of product and fair dealing, the milk trade had been brought under the close supervision of governmental agencies.

LEGAL PARITY: IMPLEMENTATION OF THE POLICY OF EQUALITY FOR AGRICULTURE, 1929–1954

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Although parity is regarded by many agricultural writers as having its legal origin with the passage of the Agricultural Adjustment Act of May 12, 1933,[1] this act did not mention the term in connection with farm prices. It did, however, express the idea of parity by implication in such words as "equivalent . . . purchasing power," "equality of purchasing power," "fair-exchange value," and "fair" prices. In this respect it was no different from its innumerable price equality antecedents, including those of the ancient world such as the Chinese price "equality" programs. Unlike its forerunners, including its immediate predecessor, the Agricultural Marketing Act of 1929, the 1933 act expressed the goal of parity in different, if not more specific, terms. The 1933 act was preceded, as was the 1929 act, by many recurring disparity price periods and resulting disparity remedies seeking the long-sought goal of equality for agriculture. Yet, the 1933 act, as compared with the 1929 act, was unique by virtue of its "base period" standard of equality.[2] The base period standard of price equality, according to its most persistent proponents of the 1920's and '30's, George N. Peek and Hugh S. Johnson of the Moline

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[1] While numerous examples can be found substantiating the prevalence of the assumption that parity originated legally with the 1933 act, it must be recognized that it was not shared universally by agricultural writers. The policy of "equality for agriculture" enacted under the Hoover administration and carried through with increased momentum by the Roosevelt administration was evidenced, for instance, in 1946 in a report by a Committee on Parity Concepts, "Outline of a Price Policy for American Agriculture for the Postwar Period," *Journal of Farm Economics*, 28:383–384 (February, 1946). Although the Agricultural Marketing Act of 1929 did represent the first major U. S. law designed to achieve price parity in the twentieth century, price parity has had a long-time evolution, the beginning of which antedates the twentieth century. See the writer's "Evolution of the Term Parity in Agricultural Usage," *Southwestern Social Science Quarterly*, 35:345–355 (March, 1955).

[2] The "base period" standard of equality is explained in the section of this study entitled "Equivalent Base Period Price Purchasing Power: 1933 Parity." Parity standards other than "base period" standards are referred to in this study as "nonbase period" standards. The Agricultural Marketing Act of 1929, for example, is classified as a "nonbase period" parity act.

Plow Company of Moline, Illinois, had among its many advantages the political advantage of freedom from the abuse of price fixing. As presented in their brief, *Equality For Agriculture*, the "controlling [price] formula [was] fixed by statute and . . . completely removed from human or partisan control."[3]

Parity is an historical concept of price equality for producers and consumers, which currently includes a base period standard of price equality. It is at the same time an evolving concept. This is shown most recently in our modern parity laws beginning with what might be classified as the "nonbase period" Agricultural Marketing Act of 1929 and continuing with the "base period" parity acts from 1933 through 1954.

Economic Equality: 1929 Parity. During the presidential campaign of 1928, the candidates of both major political parties recognized the serious nature of the farm problem and promised to help the farmer stabilize his business by government aid in the disposal of surplus crops. Alfred E. Smith, the Democratic nominee, favored the equalization-fee principle embodied in the McNary-Haugen bills, while Herbert Hoover, the Republican standard bearer, looked with disfavor upon the equalization-fee plan.[4] During the closing days of that campaign, Hoover promised that if the session of Congress ending March 4, 1929, failed to pass a suitable farm relief measure, he would, if elected, call a special session for that purpose. Three days after his inauguration President Hoover called Congress to meet in special session on April 15, 1929, to consider farm relief and limited changes in the tariff.

During the special session, Congress passed a "parity" law on June 15, 1929, officially entitled the Agricultural Marketing Act.[5] The many problems that he had encountered with "ratio" hog price supports as Food Administrator in World War I, conceivably helped convince Hoover that the "nonbase" period Marketing Act had a much more desirable parity standard than the more rigidly defined "base period" standards exemplified by the fair-exchange value schemes.[6]

The new act was designed to achieve parity by placing "agriculture . . . on a basis of economic equality with other industries. . . ." Specific base period measuring standards for economic equality in the 1929 act were not given. Parity was to be accomplished by protecting, controlling, and stabilizing interstate and foreign commerce in the marketing of agricultural commodities and their food products. In the declaration of policy, four steps were enumerated by which the broad objective was to be attained: (1) minimizing speculation; (2) preventing inefficient and wasteful distribution; (3) encouraging producer associations and corporations for greater unity of marketing; promoting and financing producer cooperatives and other agencies; and (4) preventing and controlling agricultural surpluses through orderly production and distribution so as to maintain advantageous domestic markets and prevent such surpluses from causing undue and excessive fluctuations or depressions in prices for the commodity.[7]

Insofar as price equality or price parity was concerned, the most specific interpretation that was possible from the act indicated that parity might be any price level for a commodity other than an excessively fluctuating or depressed level.[8] Presumably it was

[3] [George N. Peek and Hugh S. Johnson], *Equality for Agriculture* (Moline, Illinois, 1922), 25.

[4] Henry A. Wallace, *New Frontiers* (New York, 1934), 155.

[5] Senator Arthur A. Capper, Republican of Kansas, for many years one of the most influential Senate leaders in farm relief legislation, concluded that the passage of the Agricultural Marketing Act of 1929 would achieve economic equality for agriculture, that is, "parity" by enabling the farmer to "walk alone." See "Senator Capper Sees Parity Through Farm Relief Act—Calls Measure Fundamental for Program Enabling Farmer to 'walk alone'—Explains Mechanism Set Up for Merchandising Crops and Controlling Surplus," *Commercial and Financial Chronicle*, 128:4093–4094 (June 22, 1929), as reported in the *New York Times*, June 18, 1929, p. 2. H. L. Russell, "The Farm Board's Difficult Task," *American Bankers Association Journal*, 22:110, 166–168 (August, 1929); Clarence Poe, "Are Business Men Waking Up at Last?" *Progressive Farmer* (Texas ed.), 44:1193 (December 21, 1929); C. M. Reed, "A Challenge to America," *Saturday Evening Post*, 203:189 (September 13, 1930).

[6] Walter T. Borg, "Food Administration Experience with Hogs," *Journal of Farm Economics*, 25:444–457 (May, 1943).

[7] *U. S. Statutes at Large*, 46:11.

[8] The ill-defined price level that would be needed to achieve economic equality (parity) was apparently in deference to the second McNary-Haugen bill which omitted mention of prices because the original McNary-Haugen bill referred to prices

left to the judgment of the administrators of the act to decide what constituted excessive fluctuations or depression in prices. Income equality was expected to result from equality of price as well as from the other enumerated measures that would place agriculture on a basis of "economic equality." The designation of a surplus apparently was also to be left to the judgment of the administrators of the act:

> There shall be considered as a surplus for the purposes of this Act any seasonal or year's total surplus, produced in the United States and either local or national in extent, that is in excess of the requirements for the orderly distribution of the agricultural commodity or is in excess of the domestic requirements for such commodity.[9]

A Federal Farm Board was established to carry out the policy of placing agriculture on an economic equality with other industries. Major agricultural commodities produced in the United States were to be fairly represented by eight members to be appointed to the Farm Board. A revolving fund of 500 million dollars was appropriated to make loans to cooperative associations and stabilization corporations. Although Congress apparently desired the development of a system of cooperative marketing associations as the major method of accomplishing the intent of the act, stabilization operations quickly became the principal means for carrying out the purpose.[10] Loans were made by the Farm Board to the cooperatives in order to enable them to hold commodities in storage until the market improved. Stabilization corporations were set up for wheat and cotton which took over a large share of the supplies that had been held by the cooperatives as well as stocks acquired by direct purchases. The Board urged wheat producers to reduce production. It had no authority for bringing about a reduction in wheat production other than by voluntary means. In May 1931, the Farm Board ceased purchases of wheat after suffering heavy losses. Among other ways to hold production of cotton in line with demand, the Farm Board favored crop destruction. Governors of the cotton states were asked to lead a movement for plowing under every third row of "growing" cotton. The proposal met with opposition not only from the governors but also from many Southern officials and the press.[11] The Board did not purchase any cotton from the 1931 or any later crop, but held what it had acquired from the 1929 and 1930 crops for approximately a year and a half. Most of the Farm Board funds were used to make loans on wheat and cotton. The Board needed, according to one writer, one or two billion dollars rather than half a billion to carry stabilization operations through as severe a depression as that which developed after 1929.[12]

Toward the close of 1931, the Farm Bureau, the Grange, and the Farmers Union gave notice that Congress would be asked to modify the Agricultural Marketing Act.[13] The stage was thus set for a revival of farm relief plans to modify the disparity conditions. Dramatic evidence of the desperate nature of economic conditions was revealed by the "farm holiday" movement.[14] This movement was characterized by farmer organization to force an embargo on the movement of livestock, grain, and other products toward the central markets. Violent disputes frequently occurred between picketing farmers and sheriffs' forces.

With the failure of the Farm Board, sentiment decreased for marketing and increased for adjustment as the way out of the surplus

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and was objected to on this ground. Despite its omission, Professor Benjamin H. Hibbard of the University of Wisconsin concluded that "a surplus removing plan would be a plan by which the remaining product should be as high as those concerned want. No matter how much effort is made to cover up the price-fixing phases of the plan, it remains a price-fixing plan." B. H. Hibbard, "Equality and the American System," *Country Gentleman*, 91:125 (November, 1926).

[9] *U. S. Statutes at Large*, 46:11.

[10] *First Annual Report of the Federal Farm Board*, 1930, pp. 3, 24.

[11] *New York Times*, 1931: May 30, p. 8; August 13, p.1; 14, p. 1; 15, p. 2.

[12] Geoffrey S. Shepherd, *Agricultural Price Control* (Ames, Iowa, 1945), 35. In 1938, the Commodity Credit Corporation, which handles the current price support program, was authorized to borrow up to 500 million dollars—the same amount allocated to the Farm Board in 1929. In early 1954, this agency was authorized to borrow up to 8.5 billion dollars; in August, 1955, it was raised to 10 billion dollars.

[13] *Weekly Star Farmer*, December 8, 1931, p. 14.

[14] The name "farm holiday" was adopted since the term "holiday" had been chosen by the banks which had closed and made it impossible to withdraw money. *Des Moines Register*, March 11, 1932.

dilemma. Awareness, however, of the interacting demand-supply price making process was not lost; instead there was simply a shifting of emphasis from the symbolic demand blade to the symbolic supply blade of the Marshallian price determining scissors. Once this was done, it was felt that the fair price could be cut from the farm relief pattern. Besides attempting to affect supply more specifically, a more definite parity standard, advocated strongly in the 1920's, was favored. This was a "base period" standard of price equality.

Equivalent Base Period Price Purchasing Power: 1933 Parity. Prior to 1933, the majority of the usages of the term, parity, stressed other than base period standards of equality. Implied usages of the term up to this date, as applied to farm prices, referred also to nonbase period rather than base period standards. The identification of the term with a base period standard of equality came with the passage of the Jones bill on January 12, 1933. Passage of the bill inspired much controversial writing in the journals and newspapers, most of which was initiated by those who opposed the bill.[15] Congressman D. D. Glover, Democrat of Arkansas, asserted the bill was "pure price-fixing . . . and . . . shocking to the intelligence, even the intelligence of Congress."[16] The idea of parity became associated increasingly with the base period standard of price equality.

The Agricultural Adjustment Act of May 12, 1933, gave legal recognition to the base period standard of price equality, and inaugurated our base period parity acts which with modifications have been in effect since 1933. In the 1933 act parity was fixed at a level equal to the base period price purchasing power of farm products. The law provided:

(1) To establish and maintain such balance between the production and consumption of agricultural commodities, and such marketing conditions therefor, as will reestablish prices to farmers at a level that will give agricultural commodities a purchasing power with respect to articles that farmers buy, equivalent to the purchasing power of agricultural commodities in the base period. The base period in the case of all agricultural commodities except tobacco shall be the prewar period, August 1909–July 1914. In the case of tobacco, the base period shall be the postwar period, August 1919–July 1929.

(2) To approach such equality of purchasing power by gradual correction of the present inequalities therein at as rapid a rate as is deemed feasible in view of the current consumptive demand in domestic and foreign markets.

(3) To protect the consumers' interest by readjusting farm production at such level as will not increase the percentage of the consumers' retail expenditures for agricultural commodities, or products derived therefrom, which is returned to the farmer, above the percentage which was returned to the farmer in the prewar period, August 1909–July 1914.[17]

The idea of parity was expressed as "equality of purchasing power" and "fair-exchange value."[18]

The 1933 act sought to reduce supply and stimulate demand in the following ways:

(1) To provide for reduction in the acreage or reduction in the production for market, or both, of any basic agricultural commodity. . . .

(2) To enter into marketing agreements with processors, associations of producers, and others engaged in the handling . . . of interstate or foreign commerce of any agricultural commodity or product thereof. . . . For . . . carrying out . . . such agreement the parties thereto shall be eligible for loans under the Reconstruction Finance Corporation under section 5 of the Reconstruction Finance Corporation Act.

[15] "Temporary Bullish Features Found in Farmers' Parities," *Journal of Commerce* (January 5, 1933), 10; "Exporters Protest Cotton Parity Law," *ibid.* (January 6, 1933), 8; J. S. Lawrence, "The Parity Plan of Farm Relief," *Bradstreet's Weekly*, 61:48–51 (January 14, 1933); "Parity Plan," *The Nation*, 136:54 (January 18, 1933); "The Financial Situation," *Commercial and Financial Chronicle*, 136:361–362 (January 21, 1933); "Position of Cotton in Competition with Other Commodities," *Southern Textile Bulletin*, 43:12–13 (January 26, 1933); "Senator-elect McAdoo Criticizes Farm Parity Plan—Amendments Needed Before It Would Be Practical," *Commercial and Financial Chronicle*, 136:603 (January 28, 1933); "Farm Allotment Income vs. Cost of Living," *Commercial West*, 65:12 (January 28, 1933); "Farm Parity Plan," *Guaranty Survey*, 12:4–6 (January, 1933); "What Price Hogs?" *Breeder's Gazette*, 98:3, 13–15 (January, 1933); *New York Times*, 1933: January 3, p. 1; 7, p. 8; 9, p. 36; 10, p. 2; 11, p. 1; 13, p. 1; 14, p. 6; 16, p. 2; 17, p. 3; 19, p. 2; 20, p. 2; 23, p. 2; 25, p. 7; 25, p. 16; Feb. 12, sec. 2, p. 7; March 7, p. 28; 22, p. 16; H. N. Owen, "As Things Look to Me," *Farmer and Farm, Stock and Home* (Minn. ed.), 51:10 (February 4, 1933); "Take Counsel of Common Sense," *National Sphere*, 11:29–30 (February, 1933); "Congress Looks to Farm Parity," *Review of Reviews*, 87:54 (February, 1933).

[16] *New York Times*, January 13, 1933, p. 1.
[17] *U. S. Statutes at Large*, 48:32, 36.
[18] *Ibid.*, 48:36.

(3) To issue licenses permitting processors, associations of producers, and others to engage in the handling, in the current of interstate or foreign commerce, of any agricultural commodity or product thereof. . . .

(4) To require any licensee . . . to furnish . . . reports as to quantities of agricultural commodities . . . bought and sold and the prices thereof. . . .

(5) No person engaged in the storage in a public warehouse of any basic agricultural commodity . . . shall deliver any such commodity . . . without prior surrender . . . of such warehouse receipt.[19]

Under sub-section 2, an agency could be set up to receive loans from the Reconstruction Finance Corporation. Section 5 of the 1932 act specified:

aid in financing agriculture, commerce, and industry, including facilitating the exportation of agricultural and other products . . . corporation is authorized and empowered to make loans . . . [to] agricultural credit corporation . . . organized under the laws of any State or of the United States. . . . [20]

After the abolishment of the Federal Farm Board, the Commodity Credit Corporation, incorporated as an agency of the United States government, was organized on October 17, 1933. The C.C.C. was designed to improve farm prices and consequently farm incomes by storage and loan operations. The C.C.C. plan was closely affiliated with the Agricultural Adjustment Administration program of production control. These two programs had the common goal of price, and consequently income, improvement.

With the passage of the "Potato Act of 1935," Congress amended the Agricultural Adjustment Act of 1933. In the 1935 act, more attention was given to income parity by bringing interest and tax payments per acre into the calculation. The base period was to remain at 1909–1914 except in those cases wherein statistics were not available, then 1919–1929 or "that portion thereof for which the Secretary finds and proclaims that the purchasing power of such commodity can be satisfactorily determined . . ." shall be used.[21]

Equivalent Base Period Income Purchasing Power: 1936 Parity. Following the invalidation of the 1933 act by the Supreme Court decision in 1936, Congress passed the Soil Conservation and Domestic Allotment Act, among other reasons, for the purpose of perpetuating parity. In the 1936 act, parity was defined as a ratio between "the purchasing power of the net income per person on farms and that of the income per person not on farms that prevailed during the five-year period August 1909–July 1914, inclusive . . . ." As with the 1929 and 1933 acts, parity for producers was the major objective of the 1936 act; however, recognition was given to the need of a parity that would also be fair to consumers: "In carrying out the purposes . . . due regard shall be given to the maintenance of a continuous and stable supply of agricultural commodities adequate to meet consumer demand at prices fair to both producers and consumers."[22] The 1936 act provided for payments to cooperating farmers for reducing production. The Secretary of Agriculture was also provided funds for expansion of markets.[23]

The Agricultural Marketing Agreement Act of 1937 re-enacted and amended the provisions of the Agricultural Adjustment Act of 1933, as amended in 1935, relating to marketing agreements and orders. Except for milk and its products, the 1937 act retained the previous base periods unless:

the Secretary finds . . . that the prices that will give such commodities a purchasing power equivalent to their purchasing power during the base period . . . are not reasonable . . . he [Secretary of Agriculture] shall fix such prices . . . [and] make adjustments in such prices.[24]

Several favorable Supreme Court decisions in 1939 upheld the marketing agreements and apparently clarified their status.

Parity prices, and consequently better incomes, were to be attained through the marketing agreements which would assure more orderly marketing. They have been used mainly with milk, fruits, and vegetables; however, their use is not restricted to these commodities. Marketing agreements take the form of contracts between the Secretary of Agriculture and the handlers of the product, or market orders made compulsory upon the handlers by the Secretary. Equalizing the bargaining power between relatively few han-

[19] *Ibid.*, 48:34–35.
[20] *Ibid.*, 47:6–7.
[21] *Ibid.*, 49:750, 762.
[22] *Ibid.*, 49:1148.
[23] *Ibid.*, 49:1150–1151.
[24] *Ibid.*, 50:247.

dlers and many producers represents one of the major ways in which more orderly marketing is attempted through marketing agreements.

Equivalent Base Period Price and Income Purchasing Power: 1938 Parity. By the time the Agricultural Adjustment Act of 1938 was passed, parity, which had been used often in expressions of agricultural equality, assumed legal status as a distinct term. In the 1938 act the terms, "parity as applied to prices" and "parity as applied to income," were first used; however, emphasis continued to be placed on producer parity. In the 1938 act, consumer parity was still referred to as "fair prices."[25] Parity for prices and income is defined in the 1938 act as follows:

> 'Parity,' as applied to prices for any agricultural commodity, shall be that price for the commodity which will give to the commodity a purchasing power with respect to articles that farmers buy equivalent to the purchasing power of such commodity in the base period; and, in the case of all commodities for which the base period is the period August 1909 to July 1914, which will also reflect current interest payments per acre on farm indebtedness secured by real estate, tax payments per acre on farm real estate, and freight rates, as contrasted with such interest payments, tax payments, and freight rates during the base period. The base period in the case of all agricultural commodities except tobacco shall be the period August 1909 to July 1914, and, in the case of tobacco, shall be the period August 1919 to July 1929.
>
> 'Parity,' as applied to income, shall be that per capita net income of individuals on farms from farming operations that bears to the per capita net income of individuals not on farms the same relation as prevailed during the period August 1909 to July 1914.[26]

The 1938 law required the Agricultural Adjustment Administration to support prices of wheat, corn, and cotton at not less than 52 per cent nor more than 75 per cent of parity under specified conditions. It also permitted, but did not require, price supports on agricultural commodities other than wheat, corn, and cotton. The Secretary of Agriculture was to decide at what point between 52 and 75 per cent of parity the support price was to be set except in the case of corn. For this crop a sliding-scale or flexible support was to be set which depended upon the amount of the excess supply above normal.

[25] *Ibid.*, 52:38.
[26] *Ibid.*

Parity was to be achieved by such measures as adjustments in freight rates for farm products, new uses and new markets for farm products, loans on agricultural commodities by the Commodity Credit Corporation, marketing quotas, acreage allotments, and crop insurance.[27]

Beginning of Higher and More Rigid Price Supports, 1941. In July 1941, the law was changed to provide a "comparable" price for a commodity if the production or consumption had so changed since the base period as to result in a price out of line with parity prices for basic commodities. This act provided for 85 per cent of parity for basic commodities and 85 per cent of parity or a "comparable" price for nonbasic commodities.[28] Even with the more restrictive, if not more definitive, interpretation of parity, a fair or just price equality was assumed with the "comparable" price. The legislation defined cotton, corn, wheat, tobacco, and rice as basic commodities. Nonbasic farm commodities included other than the "basic" commodities. In December 1941, legislation was approved which added the basic commodity, peanuts, to the previous list of supported commodities.

The following January a price control act was passed designed to check wartime speculative price rises, price dislocations and inflationary tendencies. This act specifically prohibited price ceilings on farm products below certain levels deemed fair to producers. It provided also that no ceiling would be set on a farm product without the prior approval of the Secretary of Agriculture. No maximum price was to be established or maintained for any agricultural commodity below the highest of the following prices, as determined and published by the Secretary of Agriculture: (1) 110 per cent of the parity or "comparable" price for such commodity, (2) the market price on October 1, 1941, (3) the market price on December 15, 1941, or (4) the average price during July 1, 1919 to June 30, 1929.[29] In October 1942, the Price Control Act of the previous January was amended.[30] The October 1942 amendments did, among other things, reduce the 110 per cent of parity or comparable price standard provided in

[27] *Ibid.*, 52:36–77.
[28] *Ibid.*, 55:498.
[29] *Ibid.*, 56:27.
[30] *Ibid.*, 56:765.

the earlier act to 100 per cent. In effect, the arguments for parity had been so well sold that the farm bloc could not justify 110 per cent of parity during the national emergency. The amended act provided price supports on basic commodities and for those commodities which the Secretary of Agriculture requested an increase in production at 90 per cent of parity (later 92½ for cotton) for the duration of the war and for a period of two years beginning with the first of January after the declaration of termination of hostilities. This postwar provision was intended to give farmers equal protection with industrial plants during the war and postwar reconversion period. Wartime farm price supports expired at the end of 1948.

Flexible Supports in Theory, Rigid Supports in Practice, 1948–1954. The expiration of wartime controls led to the adoption of the Agricultural Act of 1948 which provided higher price supports. Price supports remained at 90 per cent of parity in 1949 for basic commodities and for dairy products, hogs, chickens, and eggs. For certain other commodities, price supports were not to exceed 90 per cent of parity.[31]

The 1948 act also introduced what is currently termed a "modernized" parity formula. This act provided for the determination of parity prices in such a way as to hold the average of all parity prices at such a level as to give farm products generally the same purchasing power as they had during the original base years, 1910–1914, but with parity prices for specific commodities adjusted to maintain the same relative relationships between commodities as prevailed during the 10 years immediately preceding the year for which the parity calculations were being made. In addition, wages of hired labor were included in the index of prices paid and provision was made for the gradual transition from the old to the new parity formula in those cases where parity prices under the new act might be lowered.

The sliding-scale provisions of the Agricultural Act of 1948, that is, support prices as a percentage of parity depending upon the supply, which were to go into effect in 1950, did not materialize. The Agricultural Act of 1949 was passed before the provisions of the 1948 act became effective. The 1949 act continued price supports at higher levels.[32] It required price supports for the basic commodities (corn, cotton, wheat, rice, tobacco, and peanuts) and for certain designated nonbasic commodities: wool, mohair, tung nuts, honey, Irish potatoes, milk, butterfat, and the products of milk and butterfat. Price supports could be granted for other nonbasic commodities by permission of the Secretary of Agriculture.

The Agricultural Act of 1949 provided price supports for five of the basic crops (wheat, corn, cotton, rice, and peanuts) at 90 per cent of parity through 1950. The law provided a flexible system of price supports after 1950 for these five basic crops. The sixth basic crop, tobacco, was to get a fixed support of 90 per cent of parity as long as the law was unchanged. During 1951 the basic crops, except tobacco, were to be supported between 80 and 90 per cent of parity. After that, the scale of support would begin at 75 per cent and not go above 90 per cent of parity. The supports were to vary with supply changes for the commodities.

The new act provided also two parity standards. One was based on 1909–1914, and the other on the most recent ten years. Following 1954, the most recent ten years were to represent the standard for the basic crops.

Although the Agricultural Act of 1949 was to provide a flexible system of price supports after 1950, the passage of a farm act in 1952 continued rigid supports for basic farm commodities through 1954.[33] Once again flexible supports, referred to as "sliding scale" supports, were deferred. The new act delayed for two years a shift to a modernized parity formula that was established in the Agricultural Act of 1949. In addition, price supports for long-staple cotton were provided on a basis comparable to that given upland cotton.

Two farm acts of 1954 are noteworthy in the continuing struggle for farm parity. They are the Agricultural Trade Development and Assistance Act of 1954 and the Agricultural Act of 1954.[34] The Trade Development Act provided for overseas disposal in the following three years of one billion dollars worth of surplus foods—800 million of which would be a gift. The remainder was to be paid for

[31] *Ibid.*, 62:1247.

[32] *Ibid.*, 63:1051.

[33] *Ibid.*, 66:758.

[34] *Ibid.*, 68:454, 897ff.

in foreign currencies which in turn would be used to buy strategic materials for our country.

The Agricultural Act of 1954 provided flexible price supports ranging from 82.5 to 90 per cent of parity for five basic crops: corn, cotton, wheat, rice, and peanuts. Tobacco, a sixth basic crop, was to be supported at 90 per cent of parity as long as growers continued to approve planting and marketing controls. The year 1955 was recognized as a "transitional" year, after which the principal (flexible) price support provisions of the Agricultural Act of 1949 would become operative.

Summary and Conclusions. From 1929 until 1938, the idea of parity had been expressed with such words as "equality," "equivalent," "fair-exchange value," and "fair" prices. The term, disparity, was mentioned in the 1933 act as the major reason for seeking "equality of [price] purchasing power" or parity.

In the Agricultural Marketing Act of 1929, the parity price level was significantly affected by what the administrators of the act considered to be a fair or just standard inasmuch as it was within the broad price range not characterized by excessive fluctuations or depressions.

The base period parity acts beginning in 1933 and currently in effect that are definitive in statistically expressed formulae are likewise affected by what is considered to be a fair or just standard. This is evidenced by the choice of the base period, the items to include in the formulae, the selection of the means to achieve a balance between demand and supply for price and in certain cases income equality, the determination of "comparable" prices, and the "fixing" of prices on certain occasions by the Secretary of Agriculture whenever he finds base period price relationships unreasonable for certain products under marketing agreements and orders.

Farm parity is defined differently by the several parity acts—particularly the 1929 act as compared with those that follow—but all have had the common objectives of (1) achieving a level of agricultural prices and in certain cases incomes at some standard of equality that is considered fair or just, and (2) adjusting agricultural surpluses or stimulating demand in order to realize the equality (parity) goals. Surpluses in the acts refer to market surpluses rather than physical surpluses, and as such may result from an excess supply, a deficient demand, a fall in the general price level, or from any other causes that may keep farm prices and consequently incomes below parity. Implicit, too, in the acts are the assumptions that price and income inequality for agriculture can be remedied, and price and income equality can be attained and maintained through price and income remedies.

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BOOK REVIEWS

Food and Agriculture in Britain: 1939–45. Aspects of Wartime Control. By R. J. HAMMOND. (Stanford, Food Research Institute, Stanford University Press, 1954, xii, 258 p., $5.00).

Disheartening problems of food supply and agricultural production confronted the British government in World War II. Dependent upon the outside world for the bulk of its food supply, the dangerous possibility existed that enemy action might cut the sea lanes and starve the island nation into submission. Defense measures covered not only the ocean lanes, but extended also to the accumulation of food stockpiles, the conservation and rationing of food, and an increase in internal food production.

Prewar preparations and wartime food controls are presented, warts and all, in Mr. Hammond's account of the efforts to meet the food problem. One is tempted to recommend this book as a handbook for future food controllers, but the author would probably hold up a warning signal. He regrets that the British used World War I precedents to meet World War II problems and says that a better rationing scheme might have been fashioned in 1940 if all World War I documents had been lost and the officials had been forced to start afresh. Similar apparent paradoxes appeared in wartime Washington, where recent history was so fresh that the struggle seemed at times aimed to attain the political ends of World War I. These seeming paradoxes do not condemn a knowledge of history, but only an uncritical use of the past to avoid the difficulties of thinking. British food policies evolved from trial and error. This lack of administrative brilliance should not occasion surprise, for there are very few administrative Joves from whose brows fully mature and perfectly-shaped policies spring. Generally, it is easier to rely upon precedent which the mists of time have gradually sanctified.

To the study of British food policy the author, now an historian in the Cabinet Office, brings training as an economic historian at the London School of Economics and experience as Historian of Food Policy for the British Official War Histories. One can wish that the author exhibited more agility in wrestling with the Queen's English, but can be grateful that British tradition and practice allow official historians to air critical judgments. Certainly this is a policy of wisdom, for if future mistakes are to be avoided, past errors, difficulties, and limitations must be understood.

After a brief review of World War I food control experiences and of peacetime planning, the author discusses the beginning of food control with the outbreak of war. Contrary to predictions, the war did not open with a spasm of violent bombing attacks, and during the *Sitzkrieg* period the food control system had time to iron out some wrinkles. Under the British food rationing system the consumer was tied to a particular retailer. This system was preferred by both consumer and retailer and was economical to administer. Such a system would work when the population remained relatively stationary. But under conditions of atomic warfare, where whole populations may be churned up, a "tied" system of food distribution will be impractical, for consumers will need to make food purchases on the run.

In this account of British food control experiences several matters stand out. Controls should be held to a minimum and should be regarded, not as an end, but simply as a necessary evil. A "tied" rationing scheme fits only a static population, and where a population acquires the mobility engendered by atomic warfare, such a system must inevitably break down. Points rationing holds great promise, for the value of commodities in terms of points can be varied easily. The increase in foodstuffs to be derived from an expansion in agriculture must be balanced against the enlarged drain on labor and materials. Any attempt to supplant or to supplement the existing distributive apparatus will be at the cost of using scarce administrative personnel and may result in more "waste" than the amount intended to be saved. Welfare considerations, while not of paramount importance, cannot be neglected, for governments must main-

tain the strength, health, and morale of their labor force if the war potential is to be preserved or increased. Under disaster conditions governments may even have to resort to community feeding to maintain life itself. Probably the thought that the author would want to leave with his audience would be that British experience shows that modern planning has not yet invalidated the arguments against collectivism.

Rodney C. Loehr, University of Minnesota

Wartime Agriculture in Australia and New Zealand, 1939–1950. By J. G. Crawford et al. and A. A. Ross. (Stanford, Food Research Institute, Stanford University Press, 1954, xiii, 345 p., illus., index, $7.50).

This book provides an authoritative and comprehensive record of the impact of wartime and postwar events on the agricultural industries and policies of the "down-under" countries. The two countries are treated separately but essentially in an analogous fashion. The first and major portion of the book is devoted to Australia under the able senior authorship of Mr. J. G. Crawford, one of Australia's leading economists, who for several years has been engaged in strategic governmental advisory work. Mr. A. A. Ross, who wrote the New Zealand section, was official war historian and investigating officer for the New Zealand Department of Agriculture.

The book offers factual evidence as to the vulnerabilities of economics with a strong dependence on the world market for primary products, and the difficulties facing such countries in achieving the flexibilities in attitudes, policies, and organization which are necessary if external economic and political disturbances are to be countered without sacrificing all semblance of developmental efficiency. The period covered in the discussion involves the transition from severe depression in world trade through partial recovery to the disruption of traditional export channels caused by the European war, followed, along with the war in the Pacific, by an ephemeral reorientation of demand both geographically and qualitatively and, finally, by a postwar opportunity for renewed agricultural development which only latently has been appreciated.

On the supply side are featured the difficulties encountered in respect to farm labor supplies and fertilizers, machinery and building and fencing materials under total mobilization and a concomitant reorientation and stimulation of local industrial activities. The various attempts to "hold the line" in agriculture are described and evaluated.

Attention is also given to problems and policies relating to the marketing and pricing of agricultural products both regarding the rationing of short supplies and the handling of surplus commodities. Among the details of specific interest to American readers will be the manner in which Australia approached these problems within the framework of a different division of constitutional powers between federal and state governments. The emergence of a "cost of production" basis for price fixing policies is also a particularly interesting element in the experiences of the two countries.

Finally, the historical material presented provides a background for an introduction to the new emphasis on agricultural development characteristic of current policy in Australia and New Zealand. This drive for increased agricultural production has emerged as world events gradually have caused a wider questioning of the "depression complex" carried over by farm leaders and others from the nineteen thirties, as a necessary dependence on agricultural exports to support broadly based developmental programs has been learned by the experience of sudden and severe losses of overseas reserves, and as a rapidly increasing population coupled with a slower rate of increase in agricultural production gave evidence of chronic trade difficulties ahead. The new objective of increased agricultural production is being approached with vigor in both countries and this book will enable the reader to get a real feeling of the difficulties involved and to understand the emerging policies and the local reasoning on which these policies are based.

Wyn F. Owen, University of Wisconsin

Steam Power on the American Farm. By Reynold M. Wik. (Philadelphia, University of Pennsylvania Press for the American Historical Association, 1953, ix, 288 p., illustrations, notes on sources, bibliography, and index, $5.00.)

From the time that steam was successfully employed in industry and transportation, imaginative men were intrigued with the idea of its application to the tasks of agriculture. Such hopes found their earliest realization on the larger cotton and sugar plantations of the South. Horse-operated sweeps and treadmills had been brought into use early in the nineteenth century to provide rotary power to operate cotton gins and cane crushers. The substitution of the fixed steam engine in such situations was a simple matter. However, the poor quality of the boilers, engines, and power transmissions available, combined with the lack of operator skills to provide a full measure of frustrations, with the result that the utilization of steam power did not spread rapidly.

In Northern agriculture, the two tasks, which suggested themselves as inviting the application of steam, were threshing and plowing, though there was also some experimentation with over-the-road transportation. It was the possibility of plowing by steam that first gripped public attention, but inventors were unable to solve the problems involved. Not until late in the century was steam plowing of any significance, and then, only on the dry plains of the Dakotas, Montana, and in California.

The application of steam to threshing was, on the other hand, readily accomplished. Reasonably satisfactory mechanical threshers had come into wide use after 1840, their chief deficiency, aside from the poor quality of the metals used in their construction, being the limited amount of power available from the sweeps and treadmills which were utilized. Custom threshing was common by 1860. Hence the substitution of steam for horsepower was readily made by cost-conscious custom threshermen whenever a satisfactory engine of convincing advantage was made available.

This volume is primarily a history of the use and of the users of the steam engine in threshing grain, and of the men who owned and operated or worked on steam-powered threshing rigs. Two preliminary chapters deal with the development

of the steam engine from the stationary device to the portable and then the self-propelled types. A third chapter takes up the core of the matter: the adoption of the steam engine particularly after 1885. Thereafter attention is devoted to the influence of steam threshing upon the farm economy and the rural society. The problems of the thresherman in his relations with the manufacturer of engines, as buyer, debtor, or in need for service, and his relations to his customers, the wheat-raising farmers, come in for ample and sympathetic attention. The circumstances of the men who worked the rigs are described both from the point of view of the rig owner as employer and from that of the crew member, whether working at his job, searching for work, or spending his wages.

The acceptance of the steam engine rested upon the development of satisfactory types of machines, of convincing demonstrations of their practicability and economy, and upon arrangements for financing buyers whose credit needs were frequently one hundred per cent of the sales price. Technological developments are dealt with only incidentally and the problems of manufacturers are explored primarily as they relate to purchasers. A chapter devoted to threshermen's organizations and threshermen's schools is brief, but particularly interesting. The volume closes with a short account of the decline of steam which followed upon the development of the gasoline tractor.

The author's enthusiasm for his subject is noteworthy; it permeates the narrative. It is, however, an enthusiasm that is not always sufficiently restrained. Neither chronology nor locale is always clear and the reader must recall for himself that the bulk of the data and of the narrative relates to the years 1880–1910 and to the wheat regions west of the Mississippi. The influence of the steam engine on agriculture was significant, but in no sense revolutionary. Its use was concentrated in the staple wheat regions and not more than one out of twenty farmers—if that many—ever owned a machine. Moreover, the steam engine supplied only a single, though an important, step in easing the tasks of harvest. The sweep and treadmill horsepowers had been useful devices limited in their effectiveness, as were the earlier steam powered rigs, in large part by the inability of the metal industries to supply satisfactory parts. This reader is also inclined to believe that the automobile did far more to prepare farmers for mechanized agriculture than the steam rig could possibly have done.

The data presented on the production of a group of seven steam engine manufacturers is difficult to evaluate without more information on the activities of other producers. The treatment accorded these manufacturers goes somewhat beyond the needs of the narrative. Though it will whet, it will not satisfy the interests of the historian concerned with business enterprise.

These critical comments deal with matters of judgment and interpretation. Professor Wiks writes with authority, based not only on a meticulous combing of a great mass of documentary information, but drawing heavily on the memories of men with personal experience and also, one feels, on his personal cultural heritage. The author's enthusiasm for his subject is contagious and adds greatly to the pleasure of reading a first-rate contribution to the history of our nation's agriculture and rural society.

Clarence H. Danhof, Tulane University

Vegetation and Watershed Management; an Appraisal of Vegetation Management in Relation to Water Supply, Flood Control, and Soil Erosion. By E. A. Colman. (New York, The Ronald Press, 1953, xv, 412 p., illus., maps, $7.00).

If the watershed from which a major city pipes its water supply be planted entirely with forests or crops grown on the contour in prudent rotations, will the city receive more water or less? How much economic benefit could be produced (hence, perhaps, how much subsidy could be afforded) in the way of major flood damages saved, or important rivers kept flowing in dry months, by a comprehensive program of conserving vegetation upon the farms and forests of the river basin? Is there any feasible treatment of the rich farm watershed above Kansas City which would retard enough of the runoff from a superflood like that of 1951 to provide the protection for which the Army Engineers designed Tuttle Creek Reservoir—now that the construction of Tuttle Creek is balked by farmers raising that very question?

In a command performance for the Conservation Foundation, Mr. Colman has carefully rounded up all the scientific knowledge on which answers to these ten-million-dollar, sometimes hundred-million-dollar, questions might be based. The result is at the other extreme of sensationalism from *Road to Survival*, or *Our Plundered Planet*; it is cautious enough to be dull. Mr. Colman is a U. S. Forest Service officer committed to research, not propaganda. If I were a civil engineer or a congressman compelled to answer one of these questions, no matter if I bore some scars from earlier encounters with foresters and soil savers of a crusading type, I would trust the figures and formulae he has in this book.

The sad truth is, and it is Mr. Colman's most important revelation, that to the most urgent and far-reaching questions on which watershed management depends, there were not, in 1953, even rudimentary answers. It is possible to predict how much a given tree, crop, or grass cover will affect the absorption-runoff of water in an experimental plot, and the quantity of *soil* washed down from an entire watershed. But quantities of *water* in rivers are another story. No contemporary engineer designing a city water supply, irrigation source, or flood control scheme, assuming he was perfectly free of professional bias for dams and levees rather than forests and terraced crops, could tell enough about the effects of vegetative measures on peak and minimum water flows to place the slightest reliance on them to reduce the cost of his own major works. Nor can any soil conservation engineer or forester actually show that his forestation or cover crops could save any of the millions designed to be spent on dams or levees below.

It was not Mr. Colman's job to tell us why we remain so ignorant concerning costly commitments we must make as though we had the answers. Perhaps scientific self-appraisal is the last concession a crusade wrings from a democracy. But his book itself faithfully reflects some shortcomings even in the little research that gained support. Principles

are set down, separate from the verifying work. Rigorously scientific tests have been made of the interrelation of vegetation and runoff; but on plots too small to predict the behavior of rivers. At the same time, planned changes have been made on the vegetation of watersheds many square miles in extent, but without setting up controls so results can be measured. Studies in the Tennessee Valley, and on the hair-trigger watersheds above Los Angeles are notable exceptions.

The questions this careful survey could not answer became public issues forty years ago. Dull as it is, this book might turn out to be a mobilizing trumpet to a few readers with imaginations aggressive enough to ask, Why the scientific laxity? Why the administrative indifference?

Henry C. Hart, University of Wisconsin

NEWS NOTES AND COMMENTS

COMMITTEES

President Charles A. Burmeister has announced the appointment of a number of committees, the names of which and their memberships follow. Committee on the Editorship: Herbert A. Kellar, chairman, Rodney C. Loehr, and Bennett H. Wall. Nominating Committee: Earle D. Ross, chairman, Russell H. Anderson, and Edward N. Wentworth. Program Committee for Joint Meeting with the American Historical Association: Thomas P. Martin, chairman, William Barns, and Allan G. Bogue. Program Committee for Joint Meeting with the Mississippi Valley Historical Association: George L. Anderson, chairman, Ben F. Rogers, Jr., and James H. Shideler.

REPRINTS

The Agricultural History Society has available reprints of many articles in the current volume of the journal at 25¢ per single copy, with additional copies at 5¢ each. Reprints from earlier issues are available on the same terms. Send orders or requests for lists to the Secretary-Treasurer, Wayne D. Rasmussen, U. S. Agricultural Marketing Service, Washington 25, D. C.

ACTIVITIES OF MEMBERS

William D. Barns of the University of West Virginia spent part of the summer of 1955 in Washington, D. C., continuing research for an agricultural history of West Virginia.

Ray A. Billington of Northwestern University contrasts methods of instruction in British and American Universities in "Education in a Shrinking World," *Northwestern University Alumni News*, 34(4):3–5 (July, 1955).

Eric Brunger, New York College for Teachers, presents "A Chapter in the Growth of the New York State Dairy Industry" in *New York History* (April, 1955).

Vernon Carstensen of the University of Wisconsin discusses "The University as Head of the Iowa School System," in *Iowa Journal of History*, 53: 213–246 (July, 1955).

Roger V. Clements of Manchester University is the author of "The Farmers' Attitude Toward British Investment in American Industry," *Journal of Economic History*, 15:151–159 (1955).

E. Merton Coulter of the University of Georgia discusses "Nancy Hart, Georgia Heroine of the Revolution: The Story of the Growth of a Tradition," in *Georgia Historical Quarterly*, 39:118–151 (June, 1955).

John C. Ellickson of the U. S. Agricultural Research Service is the author of "Trends in Number of Farms Classified by Size," *Journal of Farm Economics*, 37:506–510 (August, 1955).

Gilbert C. Fite of the University of Oklahoma taught at Vanderbilt University during the 1955 summer session. He has been appointed Chairman of the History Department, University of Oklahoma, for a four-year term.

Fletcher M. Green of the University of North Carolina discusses "Northern Missionary Activities in the South, 1846–1861," *Journal of Southern History*, 21:147–172 (May, 1955).

C. Norman Guice of Wayne University has edited a document describing "Texas in 1804," for *Southwestern Historical Quarterly*, 59:46–56 (July, 1955).

John D. Hicks' notable study, *The Populist Revolt*, has been reissued by the University of Minnesota Press.

Edward Hake Phillips of Rice Institute is the author of "The Texas Norther," *Southwestern Historical Quarterly*, 59:1–13 (July, 1955).

Carl C. Taylor has retired from his position with the Foreign Operations Administration to accept a position in India with the Ford Foundation.

Mildred Throne of the State Historical Society of Iowa discusses "The Liberal Republican Party in Iowa, 1872," in *Iowa Journal of History*, 53:121–152 (April, 1955).

H. L. Walster, long-time member of the Society, discusses "The Evolution of Agriculture in North Dakota," in *Soil Science Society of America Proceedings*, 19:118–124 (April, 1955).

A conference on "The Nature and Writing of History" was held at the University of Kansas, August 14–25, at which Professor James C. Malin, Thomas Le Duc and Robert E. Brown were the principal lecturers.

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Department of Agricultural Economics
Purdue University, Lafayette, Indiana

The Everett Eugene Edwards Awards in Agricultural History

The Agricultural History Society, in partial recognition of the outstanding services of Everett E. Edwards to the organization and in honor of his memory, has established the Everett Eugene Edwards Memorial Awards to be given to the authors of the two best articles (presidental addresses excluded) in *Agricultural History* each year. One prize of $50.00 is offered for the best manuscript submitted by an author who is in the course of taking a degree and one prize of $50.00 for the best published article by an author who is a more advanced scholar.

The Awards are financed from the Edwards Memorial Fund to which all members of the Society and other interested persons are invited to subscribe. However, the amounts necessary to pay the Awards for a period of ten years have been guaranteed by three of Edwards' former co-workers.

All articles to be considered for publication and other communications regarding editorial matters should be addressed to Vernon Carstensen, Editor, Department of Agricultural Economics, University of Wisconsin, Madison 6, Wisconsin. *Address inquiries regarding the* MEMORIAL FUND, MEMBERSHIP IN THE SOCIETY, *and business matters to* WAYNE D. RASMUSSEN, *Secretary-Treasurer*, U. S. Agricultural Marketing Service, Washington 25, D. C.